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ORGANIC
MATERIA MEDICA.
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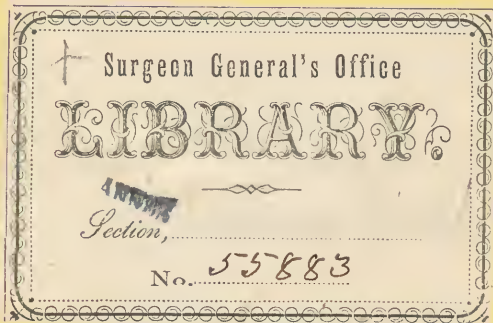
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THE
ORGANIC MATERIA MEDICA
OF THE
BRITISH PHARMACOPŒIA

SYSTEMATICALLY ARRANGED;

TOGETHER WITH

BRIEF NOTICES OF THE REMEDIES CONTAINED IN THE
INDIAN AND UNITED STATES PHARMACOPŒIAS;

BY

W. SOUTHALL, F.L.S.

“Primus gradus Sapientiæ est res ipsas nosse.”—LINNÆUS.

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INTRODUCTION.

THIS compilation is intended as a companion and key to the *Materia Medica* cabinets published by the firm of SOUTHALL, SON, and DYMOND. It contains brief descriptions of all the vegetable and animal substances contained in the British Pharmacopœia of 1867, together with those since added in the appendix of 1874. For the convenience of students all the plants, which are in part or wholly employed, are arranged botanically. Descriptions are given of the more important natural orders, and of the classes and divisions to which they belong. These descriptions are worded as simply as possible consistently with clearness ; and the broader characteristics that would be best understood by the ordinary student are selected in preference to minuter distinctions. In addition to the plants contained in the British Pharmacopœia, brief notices are given of the plants in the two other Pharmacopœias in the English tongue, viz., the Indian Pharmacopœia and that of the United States, both of which contain remedies that come increasingly under the notice of English Pharmacists. These notes are in small type, so that they may not interfere with the text. The remedies derived from animal substances are also arranged in their scientific order.

This work does not profess to be a "*Materia Medica*," but it may do service as a handbook for the use of the student who follows the Linnæan maxim quoted on the title page, and endeavours to obtain a practical knowledge of the various substances with which it is his duty to become acquainted.

CORRECTIONS.

PAGE

- 3. Aconitum Fero, read *Ferox*.
- 4. Anamista, read *Anamirta*.
- 4. Miersü, read *Miersii*.
- 7. Bixinseæ, read *Bixineæ*.
- 19. Coerhage, read *Cowhage*.
- 19. Substite, read *substitute*.
- 19. Hypogea, read *Hypogæa*.
- 43. Scropulariaceæ, read *Scrophulariaceæ*.
- 44. Anthelmenticum, read *Anthelminticum*.
- 47. Ulmas, read *Ulmus*.
- 57. Arundinaceæ, read *Marantaceæ*.

THE
ORGANIC MATERIA MEDICA
OF THE
BRITISH PHARMACOPŒIA
SYSTEMATICALLY ARRANGED.

PART I.
THE MATERIA MEDICA OF THE VEGETABLE
KINGDOM.

SUB-KINGDOM I.

PHENOGAMOUS, COTYLEDONOUS, OR FLOWERING PLANTS.—
Plants with manifest staminate and pistillate flowers.
Fertilization effected by the action of pollen cells on the
nucleus of an ovule. Propagated by seeds.

CLASS I. DICOTYLEDONS.

Stem when perennial, furnished with a pith, surrounded
by concentric layers of wood, and that by a separable bark ;
and increasing by additions between the wood already
formed and the bark. Leaves with usually netted venation.
Floral whorls usually in fours or fives or multiples of those
numbers. Embryo with two (sometimes connate) cotyledons.
In germination the radicle lengthens, and forks or branches.

SUB-CLASS I. ANGIOSPERMOUS.

Ovules produced in a closed ovary, fertilized by the
pollen tube traversing a stigmatic tissue to reach the cavity
of the ovary.

RANUNCULACEÆ.

DIVISION I. POLYPETALOUS.

Flowers with both a calyx and a corolla, the latter of separate petals.

SERIES I. THALAMIFLORAL.

Sepals usually distinct and separate, free from the ovary. Petals hypogynous, inserted on the thalamus. Stamens hypogynous. Ovary superior.

Natural Order I. RANUNCULACEÆ.

Perennial or annual herbs, with radical or alternate leaves, generally much divided; rarely climbing shrubs with opposite leaves. Stipules absent or adnate to the petioles. Flowers regular; or irregular (*Delphinium*, *Aconitum*). Sepals five or more, rarely fewer, deciduous or seldom persistent, often petaloid, imbricate or valvate in bud. Petals often undeveloped, or five or more, sometimes only three, frequently minute or deformed. Stamens many, hypogynous; anthers adnate, dehiscing longitudinally. Carpels, usually numerous, seldom only one, usually free, one-celled. Style simple; seeds one or more on the ventral suture. Fruit of one-seeded achenes or many-seeded follicles. A large order dispersed all over the world. Many species are acrid, and some highly poisonous, especially the Aconites.

Example for study—Common Buttercup.

ACONITI RADIX (Aconite Root).—The dried root of *Aconitum Napellus*. Imported from Germany, or cultivated in Britain, and collected in the winter or early spring before the leaves have appeared.

Characters—Usually from one to three inches long, not thicker than the finger at the crown, tapering, blackish-brown, internally whitish. A minute portion, cautiously chewed, causes prolonged tingling and numbness.

Preparations.

Aconitia	...	...	...	The active principle.
Linimentum Aconiti	...	...	...	1 ounce to 1 fluid ounce.
Tinctura Aconiti	...	...	...	54½ grains to 1 fluid ounce.

ACONITI FOLIA (Aconite Leaves).—The fresh leaves and flowering tops of *Aconitum Napellus*. Gathered when about one-third of the flowers are expanded, from plants cultivated in Britain.

Characters—Leaves smooth, palmate, divided into five deeply cut wedge-shaped segments; exciting slowly, when chewed, a sensation of tingling. Flowers numerous, irregular, deep blue, in dense racemes.

Preparation.

Extractum Aconiti.

PODOPHYLLI RADIX (Podophyllum Root).—The dried rhizome of *Podophyllum peltatum*. Imported from North America.

Characters—In pieces of variable length, about two lines thick, mostly wrinkled longitudinally, dark reddish-brown externally, whitish within, breaking with a short fracture; accompanied with pale brown rootlets. Powder yellowish-grey, sweetish in odour, bitterish, subacid and nauseous in taste.

Preparation.

Resina Podophylli.

Other plants belonging to the order Ranunculaceæ more or less used in medicine—*ANEMONE PULSATILLA*, indigenous to some of the chalk districts of England, much used by Homœopathic practitioners. *DELPHINIUM STAPHISAGRIA*, the seeds known as *Stavesacre*. *ACONITUM FERO* (*Bikh* or *Bish*) and *A. HETEROPHYLLUM* (*Atis*), the latter not poisonous but tonic, together with *COPTIS TEETA*, a pure bitter, are official in the Indian Pharmacopœia; *COPTIS TRIFOLIATA* (*Gold Thread*), *HELLEBORUS NIGER* (*Black Hellebore*), and *HYDRASTIS CANADENSIS* (*Yellow Root*) are official in that of the United States.

Order II. MAGNOLIACEÆ.

ILLICIUM ANISATUM (Star Anise, Badiane).—

The whole plant, particularly the fruit, has the flavour and odour of the European Anise, and the oil distilled in China from the fruit forms the greater portion of the Oil of Aniseed of commerce, and is regarded as superior to that obtained from the fruit of *Pimpinella Anisum*. The fruit is in whorled follicles having the appearance of a star.

Character of the Oil—Colourless or pale yellow, having the odour of anise and a warm sweetish taste; concretes at 50°.

Other Plants of the order Magnoliaceæ—*DRIMYS WINTERI*, of Antarctic America, once well known as *Winter's Bark*.

MENISPERMACEÆ.

Order III. MENISPERMACEÆ.

PAREIRÆ RADIX (Pareira Root).—The dried root of *Cissampelos Pareira*. Brazil.

Characters—Cylindrical oval or compressed pieces, entire or split longitudinally, half an inch to four inches in diameter, and four inches to four feet in length. Bark greyish-brown, longitudinally wrinkled, crossed transversely by annular elevations; interior woody, yellowish-grey, porous, with well-marked often incomplete concentric rings and medullary rays. Taste at first sweetish and aromatic, afterwards intensely bitter. But the Pareira Root, ordered and described in the British Pharmacopœia is supposed to be spurious, and a specimen of the true Root of *Cissampelos Pareira* will be found in the collection.

Preparations.

Decoctum Pareiræ	...	...	1½ ounce to pint.
Extractum Pareiræ.			
Extractum Pareiræ liquidum	...		1 ounce to 1 fluid ounce.

CALUMBÆ RADIX (Calumba Root).—The root, cut transversely and dried, of *Jateorrhiza Columba* and *Miersü*. From the forests of Eastern Africa, between Ibo and the Zambezi.

Characters.—Slices, flat, circular, or oval, about two inches in diameter, and from two to four lines thick, softer and thinner towards the centre, greyish-yellow, bitter. A decoction, when cold, is blackened by the solution of iodine.

Dose in Powder—5 to 20 grains.

Preparations.

Extractum Calumbæ	...	...	about 2½ ounces from 1 pound.
Infusum Calumbæ	...	...	1 ounce to 1 pint.
Mistura Ferri Aromatica	...	...	½ ounce to 16 fluid ounces.
Tinctura Calumbæ	...	...	2½ ounces to 1 pint.

Other Plants of the order Menispermaceæ—*ANAMISTA COCCULUS*, known as *Cocculus Indicus*, is used to intoxicate and poison fish, and to give a bitter taste to beer. The narcotic and highly poisonous properties are due to the active principle *Picrotoxine*. This together with *TINOSPORA CORDIFOLIA* (*Galancha*) is officinal in the Indian Pharmacopœia, 'as also is the *BERBERIS ASIATICA* (*Indian Barberry*) in the allied order of *BERBERIDÆ*. *Podophyllum* is referred to this latter order by some of our best Botanists.

Order IV. PAPAVERACEÆ.

Annual or perennial herbs; juice milky; yellow, white, or red: leaves alternate, entire, lobed, or finely divided. Inflorescence terminal, peduncles usually one-flowered, rarely sub-umbellate. Flowers regular. Sepals two, or rarely three, caducous. Petals, hypogynous, very rarely perigynous, equal, free, often crumpled in æstivation. Stamens generally hypogynous, numerous, free, or few. Carpels connate into an ovoid or oblong one-celled ovary. Placentas two—many, parietal, sometimes prolonged into vertical incomplete septa (*Papaver*). Styles short or obsolete, stigmas radiating or lobed. Ripe Carpels dehiscing by pores or valves, more rarely indehiscent, generally connate into a capsule or one-celled siliqua. Seeds, few or many, albuminous, oily.

Example for study—The Red Poppy.

PAPAVERIS CAPSULÆ (Poppy Capsules).—

The nearly ripe dried capsules of the White Poppy, *Papaver somniferum*. Cultivated in Britain.

Characters—Globular, two or three inches in diameter, crowned by a sessile stellate stigma.

Preparations.

Decoetum Papaveris	...	...	...	2 ounces to 1 pint.
Extractum Papaveris	...	...	...	1 part from 3, nearly.
Syrupus Papaveris	...	...	...	1 part to 3, nearly.

OPIUM (Opium).—The juice, inspissated by spontaneous evaporation, obtained by incision from the unripe capsules of the Poppy, *Papaver somniferum*. Grown in Asia Minor.

Characters—Irregular lumps, weighing from four ounces to two pounds; enveloped in the remains of Poppy leaves, and generally covered with the chaffy fruits of a species of rumex; when fresh, plastic, tearing with an irregular slightly moist chestnut-brown surface, shining when rubbed smooth with the finger, having a peculiar odour and bitter taste.

Test—Take of opium one hundred grains, slaked lime one hundred grains, distilled water four ounces. Break down the opium, and steep it in an ounce of the water for twenty-four hours, stirring the mixture frequently. Transfer it to a displacement apparatus, and pour on the remainder of the water in successive portions, so as to exhaust the opium

PAPAVERACEÆ.

by percolation. To the infusion thus obtained, placed in a flask, add the lime, boil for ten minutes, place the undissolved matter on a filter, and wash it with an ounce of boiling water. Acidulate the filtered fluid slightly with diluted hydrochloric acid, evaporate it to the bulk of half an ounce, and let it cool. Neutralise cautiously with solution of ammonia, carefully avoiding an excess; remove by filtration the brown matter which separates, wash it with an ounce of hot water, mix the washings with the filtrate, concentrate the whole to the bulk of half an ounce, and add now solution of ammonia in slight excess. After twenty-four hours collect the precipitated morphia on a weighed filter, wash it with cold water, and dry it at 212°. It ought to weigh at least from six to eight grains.

Dose— $\frac{1}{2}$ grain to 2 grains.

Preparations.

Confectio Opii	1 part in 40, nearly.
Emplastrum Opii	1 part in 10.
Enema Opii	$\frac{1}{2}$ fl. dram Tincture to 2 fl. oz.
Extractum Opii	About 1 part from 2.
Extractum Opii liquidum	22 grs. extract in 1 fl. oz., nearly.
Linimentum Opii	1 volume Tincture in 2 volumes.
Morphiæ Acetas... ..	About 1 part from 8 or 10.
Morphiæ Acetatis Liquor	4 grs. Acetate in 1 fl. oz.
Morphiæ Hydrochloras... ..	About 1 part from 8 or 10.
Morphiæ Hydrochloras Liquor	4 grs. Hydrochlorate in 1 fl. oz.
Pilula Ipecacuanhæ cum Scillâ	1 part in 16 $\frac{1}{2}$, nearly.
Pilula Plumbi cum Opio	1 part in 8.
Pilula Saponis composita	1 part in 6, nearly.
Pulvis Cretæ aromaticus cum Opio	1 part in 40.
Pulvis Ipecacuanhæ compositus	1 part in 10.
Pulvis Kino compositus	1 part in 20.
Pulvis Opii compositus	1 part in 10.
Tinctura Camphoræ composita	2 grains to 1 fluid ounce.
Tinctura Opii	33 grains to 1 fluid ounce, nearly.
Tinctura Opii ammoniata	5 grains to 1 fluid ounce.
Trochisci Opii	One-tenth grain in each.
Unguentum Gallicæ cum Opio	32 grains to 1 ounce.
Vinum Opii	22 grs. extract in 1 fl. oz., nearly.

RHŒADOS PETALA (Red-Poppy Petals).—The fresh petals of *Papaver Rhœas*. From indigenous plants.

Characters—Of a scarlet colour and heavy poppy odour.

Preparation.

Syrupus Rhœados.

Other Plants of the order—*SANGUINARIA CANADENSIS* (*Blood root*). Official in the United States Pharmacopœia. *CHELIDONIUM MAJUS* (*Celandine*), a wayside plant, the acrid juice of which is applied to warts.

CRUCIFERÆ.

Order V. CRUCIFERÆ.

Usually herbs, rarely shrubby plants, with radical leaves in rosettes, cauline alternate, destitute of stipules, the radical leaves often runcinate and the cauline often auricled. Flowers usually in terminal racemes, rarely solitary. Sepals four, free, of which two are often saccate at the base. Petals four, hypogynous, arranged in a cross, deciduous. Stamens six, tetradynamous. Ovary of two connate carpels. Style none, stigmas two, placentation parietal, usually two celled by a false vertical septum termed a replum. Fruit elongated, a siliqua, or short, a silicula; dehiscence by separation of the valves, but sometimes indehiscent.

Example for study—Garden Wallflower.

ARMORACIÆ RADIX (Horseradish Root).—

The fresh root of *Cochlearia Armoracia*. Cultivated in Britain.

Characters—A long cylindrical, fleshy root, half an inch to one inch in diameter, expanding at the crown into several very short stems. It is internally white, and has a pungent taste and smell.

Preparation.

Spiritus Armoracie compositus.

SINAPIS (Mustard).—The seeds of *Sinapis nigra*, and *Sinapis alba*; also the seeds reduced to powder, mixed.

Characters of the Powder—Greenish-yellow, of an acrid bitterish oily pungent taste, scentless when dry, but exhaling when moist a pungent penetrating peculiar odour, very irritating to the nostrils and eyes. A decoction cooled is not made blue by tincture of iodine.

Preparations.

Cataplasma Sinapis. Oleum Sinapis.

Other Plants of the order Crucifere—In the Pharmacopœia of India, SINAPIS JUNCEA, *Rai*, or *Indian Mustard*, is officinal. GYNOCARDIA ODORATA (natural order BIXINSEÆ) is also officinal in the Pharmacopœia of India, its seeds being the part employed both internally and externally.

Order VI. MALVACEÆ.

Herbs, shrubs or trees with light and soft wood. Leaves alternate, usually palmilobed, stipulate. Flowers regular, usually axillary, often surrounded by an involucre of whorled bracts. Sepals five, more or less united. Petals five, hypogynous, with a twisted aestivation. Stamens monadelphous, numerous. Carpels numerous, usually whorled, free or combined, one-seeded. Disk sometimes growing up between the carpels. Seeds reniform, sometimes hairy.

Examples for study—Garden Hollyhock and Common Mallow.

GOSSYPIUM (Cotton Wool).—The hairy covering of the seeds of several species of *Gossypium*, carded.

Preparation.

Pyroxylin, Gun Cotton.

Other Plants of the order Malvaceæ—*ALTHEA OFFICINALIS*, well known in this country, is officinal in the Pharmacopœia of the United States, and *HIBISCUS ESCULENTUS*, a demulcent, in the Pharmacopœia of India. This latter is an article of diet in the tropics.

Order VII. BYTTERNIACEÆ.

OLEUM THEOBROMA (Oil of Theobroma).—Synonym Cacao Butter. A concrete oil obtained by expression and heat from the ground seeds of *Theobroma Cacao*, a small tree, a native of Demerara and Mexico.

Characters—Of the consistency of tallow; colour yellowish, odour resembling that of chocolate, taste bland and agreeable, fracture clean, presenting no appearance of foreign matter, does not become rancid from exposure to the air, melts at a temperature of 122°.

Preparations.

Suppositoria Acidi Tannici	...	...	...	1 part in 2.
Suppositoria Hydrargyri	...	...	...	1 part in 2.
Suppositoria Morphia	...	...	...	1 part in 2.
Suppositoria Plumbi Compositæ	...	...	...	4 parts in 9.

Order VIII. GUTTIFERÆ.

CAMBOGIA (Gamboge).—A gum-resin obtained from *Garcinia Morella*. Imported from Siam.

POLYGALACEÆ—AURANTIACEÆ.

Characters and Test—In cylindrical pieces, breaking easily with a smooth conchoidal glistening fracture; colour tawny, changing to yellow when it is rubbed with water; taste aërid. An emulsion made with boiling water and cooled, does not become green with the solution of iodine.

Dose—1 to 4 grains.

Preparation.

Pilula Cambogiæ composita ... 1 part in 6, nearly.

Other Plants of the order Guttifera—GARCINIA PICTORIA possesses identical properties with the Siam Gamboge tree, and its resin is official in the Pharmacopœia of India. GARCINIA PURPUREA, also in the Pharmacopœia of India, affords Kokum Butter by expression of its seeds, which may be used for ointments and suppositories. DIPTEROCARPUS LÆVIS, *Gurjum*, or the *Wood Oil Tree*, of the order DIPTERACEÆ, is official in the Pharmacopœia of India, its balsam being used instead of Copaiba.

Order IX. POLYGALACEÆ.

SENEGÆ RADIX (Senega Root).—The dried root of Polygala Senega. From North America.

Characters—A knobby root-stock, with a branched tap-root, of about the thickness of a quill, twisted and keeled; bark yellowish-brown; sweetish, afterwards pungent, causing salivation; interior woody, tasteless, inert.

Preparations.

Infusum Senegæ	...	...	...	...	1 ounce to 1 pint.
Tinctura Senegæ	...	...	...	...	2½ ounces to 1 pint.

KRAMERIÆ RADIX (Rhatany Root).—The dried root of Krameria triandra. Imported from Peru.

Characters—About an inch in diameter, branches numerous, long, brownish-red and rough externally, reddish-yellow internally, strongly astringent, tinging the saliva red.

Preparations.

Extractum Krameriæ.					
Infusum Krameriæ	...	...	..	1 ounce to 1 pint.	
Pulvis Catechu compositus	...	...	...	1 part in 5.	
Tinctura Krameriæ	...	...	...	2½ ounces to 1 pint.	

Order X. AURANTIACEÆ.

BELÆ FRUCTUS (Bael Fruit).—The dried half-ripe fruit of *Ægle Marmelos*. From Malabar and Coromandel.

AURANTIACEÆ—VITACEÆ.

Characters—Fruit roundish, about the size of a large orange, with a hard woolly rind; usually imported in dried slices, or in fragments consisting of portions of the rind and adherent dried pulp and seeds. Rind about a line and a half thick, covered with a smooth pale-brown or greyish-epidermis, and internally, as well as the dried pulp, brownish-orange, or cherry-red. The moistened pulp is mucilaginous.

Preparation.

Extractum Belæ liquidum ... 1 ounce to 1 fl. ounce.

AURANTII CORTEX (Bitter-Orange Peel).—The dried outer part of the rind of the bitter orange, *Citrus Bigaradia*. From the ripe fruit imported from the South of Europe.

Characters—Thin, of a dark orange colour, nearly free from the white inner part of the rind, having an aromatic bitter taste and fragrant odour.

Preparations.

Infusum Aurantii...	...	...	1 ounce to 1 pint.
Infusum Aurantii compositum...	...	...	$\frac{1}{2}$ ounce to 1 pint.
Infusum Gentianæ compositum	...	...	120 grains to 1 pint.
Mistura Gentianæ	...	...	60 grains to 1 pint.
Tinctura Aurantii	...	...	2 ounces to 1 pint.
Tinctura Gentianæ composita	...	...	$\frac{3}{4}$ ounce to 1 pint.

LIMONIS CORTEX (Lemon Peel).—The outer part of the rind of the fresh fruit of *Citrus Limonum*. Lemons are imported from Southern Europe.

Preparations.

Infusum Aurantii compositum...	...	120 grains to 1 pint.
Infusum Gentianæ compositum	...	$\frac{1}{2}$ ounce to 1 pint.
Oleum Limonis.		
Syrupus Limonis ...	...	1 ounce to 1 $\frac{3}{4}$ pound.
Tinctura Limonis ...	...	2 $\frac{1}{2}$ ounces to 1 pint.

Other Plants belonging to the order Aurantiaceæ—*CITRUS BERGAMIA* is officinal in the Pharmacopœia of India; also *TODDALIA ACULEATA*, the root bark of which is an aromatic tonic.

Order XI. VITACEÆ.

UVÆ (Raisins).—The ripe fruit of *Vitis vinifera*, the Grape Vine. Dried in the sun or with artificial heat; imported from Spain.

Preparations.

Tinctura Cardamomi composita. Tinctura Sennæ.

CANELLACEÆ—RUTACEÆ.

Order XII. CANELLACEÆ.

CANELLÆ ALBÆ CORTEX (*Canella Alba* Bark.)—The bark of *Canella alba*. From the West Indies.

Characters—In quills or broken pieces, hard, of a yellowish white or pale-orange colour, somewhat lighter on the internal surface. It has an aromatic clove-like odour, and an acrid peppery taste.

Preparation.

Vinum Rhei 60 grains to 1 pint.

Order XIII. RUTACEÆ.

BUCHU FOLIA (*Buchu Leaves*).—The dried Leaves of, 1. *Barosma betulina*, *Bartling*. 2. *Barosma crenulata*, *Hooker*. 3. *Barosma serratifolia*, *Willd*. Imported from the Cape of Good Hope.

Characters—Smooth, marked with pellucid dots at the indentations and apex; having a powerful odour and a warm camphoraceous taste. 1. About three quarters of an inch long, coriaceous, obovate, with a recurved truncated apex and sharp cartilaginous spreading teeth. 2. About an inch long, oval-lanceolate, obtuse, minutely crenated, five-nerved. 3. From an inch to an inch and a half long, linear-lanceolate, tapering at each end, sharply and finely serrated, three-nerved.

Preparations.

Infusum Buchu 1 ounce to 1 pint.
Tinctura Buchu 2½ ounces to 1 pint.

CUSPARIÆ CORTEX (*Cusparia Bark*).—The bark of *Galipea Cusparia*. From tropical South America.

Characters and Tests—In straight pieces more or less incurved at the sides, from half a line to a line in thickness, pared away at the edges; epidermis mottled, brown or yellowish-grey; inner surface yellowish-brown, flaky; breaks with a short fracture; the taste is bitter and slightly aromatic. The cut surface examined with a lens usually exhibits numerous white points or minute lines. The inner surface touched with nitric acid does not become blood-red.

Preparation.

Infusum Cuspariæ 1 ounce to 1 pint.

RUTACEÆ—SIMARUBACEÆ—ZYGOPHYLLACEÆ.

OLEUM RUTÆ (Oil of Rue).—The oil distilled from the fresh herb of *Ruta Graveolens*, a native of Southern Europe, but common also in gardens in this country.

Characters—Colour pale yellow, odour disagreeable, taste bitter, acrid.

Order XIV. **SIMARUBACEÆ.**

QUASSIÆ LIGNUM (Quassia Wood).—The wood of *Picræna excelsa*. From Jamaica.

Characters—Billets varying in size, seldom thicker than the thigh. Wood dense, tough, yellowish white, intensely and purely bitter. Also chips of the same.

Preparations.

Extractum Quassiæ.			
Infusum Quassiæ ...	...	...	6 grains to 1 fluid ounce.
Tinctura Quassiæ ...	...	...	16½ grains to 1 fluid ounce.

Order XV. **ZYGOPHYLLACEÆ.**

GUAIACI LIGNUM (Guaiacum Wood).—The wood of *Guaiacum officinale*. Imported from St. Domingo and Jamaica, and reduced by the turning lathe to the form of a coarse powder or small chips.

Preparation.

Decoetum Sarsæ compositum	¼ ounce to 1 pint.
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GUAIACI RESINA (Guaiacum Resin).—The resin of *Guaiacum officinale*. Obtained from the stem by natural exudation, by incisions, or by heat.

Characters—In large masses of a brownish or greenish-brown colour; fractured surface resinous, translucent at the edges. A solution in rectified spirit strikes a clear blue colour when applied to the inner surface of a paring of raw potato.

Dose—10 to 30 grains.

Preparations.

Mistura Guaiaci	...	...	11 grains in 1 fl. ounce.
Pilula Hydrargyri Subchloridi composita	...	...	1 part in 2½.
Tinctura Guaiaci ammoniata...	...	...	88 grains in 1 fl. ounce.

Order XVI. LINACEÆ.

LINI SEMINA (Linseed).—The seeds of *Linum usitatissimum*. Cultivated in Britain.

Characters—Small, oval, pointed, flat, with acute edges, smooth shining brown externally, yellowish-white within, of a mucilaginous oily taste.

Preparations.

Farina Lini.

Infusum Lini... 16 grains to 1 fl. ounce.

To conclude the Thalamifloral series, in the order SAPINDACEÆ is PAULLINIA SORBILIS, producing the Guarana or *Brazilian Cocoa*, lately much used in this country. GERANIUM MACULATUM, GERANIACEÆ, *Alum Root*, a powerful astringent, is official in the Pharmacopœia of the United States. AZADARICHTA INDICA, the *Nim Tree*, with a bitter, tonic bark, and stimulant leaves, and SOYMIDA FEBRIFUGA, the *Rohim Tree*, also tonic, both of the order MELIACEÆ, are official in the Pharmacopœia of India.

SERIES II. CALYCIFLORAL.

Flowers having usually a calyx and corolla. Sepals rarely free, often adnate to the ovary. Petals mostly distinct and inserted on the calyx. Stamens perigynous. Ovary frequently inferior.

Order XVII. RHAMNACEÆ.

RHAMNI SUCCUS (Buckthorn Juice).—The recently expressed juice of the ripe berries of common Buckthorn, *Rhamnus Catharticus*, a native of Britain.

Characters—Deep red by reflected, green by transmitted light.

Preparation.

Syrupus Rhamni.

Order XVIII. ANACARDIACEÆ.

MASTICHE (Mastich).—A resinous exudation obtained by incision from the stem of *Pistacia Lentiscus*, produced in the island of Scio.

Characters—Small irregular yellowish tears, brittle, becoming soft and ductile when chewed, having a faint agreeable odour.

Order XIX. AMYRIDACEÆ.

MYRRHA (Myrrh).—A gum-resinous exudation from the stem of *Balsamodendron Myrrha*. Collected in Arabia Felix and Abyssinia.

Characters—In irregular shaped tears or masses varying much in size, somewhat translucent, of a reddish-yellow, or reddish-brown colour, fractured surface irregular and somewhat oily; odour agreeable and aromatic, taste acrid and bitter.

Preparations.

Decoctum Aloes compositum	...	3 grains to 1 fluid ounce.
Mistura Ferri composita	...	6 grains to 1 fluid ounce.
Pilula Aloes et Myrrhæ	...	1 part in 6.
Pilula Assafoetidæ composita	...	1 part in 3½.
Pilula Rhei composita	...	1 part in 8 nearly.
Tinctura Myrrhæ	...	54½ grains to 1 fluid ounce.

ELEMI (Elemi).—A concrete resinous exudation, the botanical source of which is undetermined, but is probably *Canarium commune*. Chiefly imported from Manilla.

Characters—A soft unctuous adhesive mass, becoming harder and more resinous by age; of a yellowish-white colour, with a rather fragrant fennel-like odour; almost entirely soluble in rectified spirit.

Preparation.

Unguentum Elemi	1 part in 5.
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BOSWELLIA FLORIBUNDA, the *Olibanum Tree*, is officinal in the Pharmacopœia of India.

Order XX. LEGUMINOSÆ.

Herbs, shrubs, or trees. Leaves alternate, stipulate, usually compound. *Sub-order I: Papilionaceæ.*—Leaves stipulate, often terminating in tendrils. Flowers perfect, inflorescence axillary, imbricate in æstivation. Calyx more or less irregular. Petals usually five, Papilionaceous, *i.e.*, the posterior petal (*standard*) embracing the others, the two lateral (*wings*) alike, pressed upon the two anterior, also alike, often united together (*keel*). Stamens ten, monadelphous, or diadelphous by the separation of one filament.

LEGUMINOSÆ.

Ovary solitary, pod one-celled, a legume. *Sub-order II: Cæsalpinieæ*.—Petals nearly regular or Sub-Papilionaceous, imbricated in æstivation, the upper or odd petal inside the others; filaments generally not coherent. Pod often indehiscent, sometimes pluricelled as in *Cassia*. *Sub-order III: Mimoseæ*.—Petals equal, valvate in æstivation.

Example for study of Papilionaceæ—The Garden Pea.*

Sub-Order I. Papilionaceæ.

TRAGACANTHA (Tragacanth).—A gummy exudation from the stems of *Astragalus verus*, and possibly other species. Collected in Asia Minor.

Characters—White or yellowish, in broad shell-like slightly curved plates, tough and elastic, but rendered more pulverisable by a heat of 120° Fahr.; very sparingly soluble in cold water; but swelling into a gelatinous mass, which is tinged violet by tincture of iodine. After maceration in cold water the fluid portion is not precipitated by the addition of rectified spirit.

Preparations.

Confectio Opii...	...	...	1 part in 120, nearly.
Mucilago Tragacanthæ	...	...	60 grains to 10 fl. ounces.
Pulvis Opii compositus	...	...	1 part in 30.
Pulvis Tragacanthæ compositus	...	...	1 part in 6.

GLYCYRRHIZÆ RADIX (Liquorice Root).—

The root or underground stem, fresh and dried, of *Glycyrrhiza glabra*. Cultivated in England.

Characters—In long cylindrical branched pieces, an inch or less in diameter, tough and pliable; of a greyish-brown colour externally, yellow internally, without odour, of a sweet mucilaginous and slightly acid taste. Digested with water it yields a solution which gives a precipitate with diluted sulphuric acid.

Preparations.

Confectio Terebinthinæ	...	...	1 part in 4, nearly.
Decoctum Sarsæ compositum	...	...	$\frac{1}{2}$ ounce to 1 pint.
Extractum Glycyrrhizæ.			
Infusum Lini	...	...	120 grains to 1 pint.
Pilula Hydrargyri	...	...	1 part in 6.
Pilula Ferri Iodidi	...	...	1 part in 2 $\frac{3}{4}$ nearly.

* Of the other sub-orders there are no familiar plants to refer to. The well-known *Acacia* tree of our gardens (*Robinia*), and the *Colutea*, *Bladder Senna*, said to be sometimes used to adulterate *Senna*, are both *Papilionaceæ*. The *Judas Tree*, sometimes seen in gardens, belongs to the sub-order *Cæsalpinieæ*.

LEGUMINOSÆ.

INDIGO.—A blue pigment prepared from various species of Indigofera, natives of India. It is very poisonous. Employed in chemical testing.

BALSAMUM TOLUTANUM (Balsam of Tolu).

—A balsam obtained from Myroxylon Toluifera. It exudes from the trunk of the tree after incisions have been made into the bark. From New Granada.

Characters—A soft and tenacious solid, with a fragrant balsamic odour; soluble in rectified spirit.

Dose—10 to 20 grains.

Preparations.

Syrupus Tolutanus ...	...	1½ ounce to 3 pounds.
Tinctura Benzoini composita ...	...	11 grains to 1 fl. ounce.
Tinctura Tolutana ...	...	54½ grains to 1 fl. ounce.

BALSAMUM PERUVIANUM (Balsam of Peru).

—A balsam obtained from Myroxylon Pereiræ. It exudes from the trunk of the tree after the bark has been scorched and removed. From Salvador in Central America.

Characters—A reddish-brown or nearly black liquid, translucent in thin films; having the consistence of syrup, a balsamic odour, and an acrid slightly bitter taste; soluble in five parts of rectified spirit. Undergoes no diminution in volume when mixed with water.

Dose—10 to 15 minims.

PHYSOSTIGMATIS FABÆ (Calabar Bean).—

The seed of Physostigma venenosum. Western Africa.

Characters—About the size of a very large horse-bean, with a very firm, hard, brittle, shining integument of a brownish-red, pale-chocolate, or ash-grey colour. Irregularly kidney-shaped, with two flat sides, and a furrow running longitudinally along its convex margin, ending in an aperture near one end of the seed. Within the shell is a kernel consisting of two cotyledons, weighing on an average about 46 grains, hard, white, and pulverisable, of a taste like that of the ordinary edible leguminous seeds, without bitterness, acrimony, or aromatic flavour. It yields its virtues to alcohol and imperfectly to water.

Dose, in powder—1 to 4 grains.

Preparation.

Extractum Physostigmatis.

LEGUMINOSÆ.

KINO (Kino).—The inspissated juice obtained from incisions made in the trunk of *Pterocarpus Marsupium*. Imported from Malabar.

Characters—In small angular brittle glistening reddish-black fragments, translucent and ruby-red on the edges, inodorous, very astringent. When chewed it tinges the saliva blood-red.

Dose—10 to 30 grains.

Preparations.

Pulvis Catechu compositus...	...	...	1 part in five.
Pulvis Kino compositus	...	...	3 $\frac{3}{4}$ parts in five.
Tinctura Kino	...	...	2 oz. to 1 pint.

PTEROCARPI LIGNUM (Red Sandal Wood).—The Wood of *Pterocarpus santalinus*. From Ceylon.

Characters—Dense heavy billets, outwardly dark brown, internally variegated with dark and lighter red rings, if cut transversely. Powder blood-red, of a faint peculiar odour, and an obscurely astringent taste. Also chips of the same.

Preparation.

Tinctura Lavandulæ composita.

SCOPARII CACUMINA (Broom Tops).—The fresh and dried tops of *Sarothamnus Scoparius*. From indigenous plants.

Characters—Straight angular dark green smooth tough twigs, of a bitter nauseous taste, and of a peculiar odour when bruised.

Preparations.

Decoctum Scoparii...	...	...	1 ounce (dried) to 1 pint.
Succus Scoparii (fresh).			

Sub-order II. Cæsalpinieæ.

SENNA ALEXANDRINA (Alexandrian Senna).
—The leaflets of *Cassia lanceolata*, and *Cassia obovata*. Imported from Alexandria; carefully freed from the flowers, pods, and leafstocks of the same, and from the leaves, flowers, and fruit of *Solenostemma Argel*.

Characters and Tests—Lanceolate or obovate leaflets, about an inch long, unequally oblique at the base, brittle, greyish-green, of a faint peculiar odour, and mucilaginous sweetish taste. The unequally oblique base, and freedom from bitterness, distinguish the Senna from the Argel leaves, which moreover are thicker and stiffer.

LEGUMINOSÆ.

Preparations.

Confectio Sennæ ...	...	...	...	1 part in 11, nearly.
Infusum Sennæ ...	...	...	...	2 ounces to 1 pint.
Mistura Sennæ composita.				
Syrupus Sennæ ...	...	...	...	1 ounce to 2 fl. ounces.
Tinctura Sennæ ...	...	...	...	2½ ounces to 1 pint.

SENNA INDICA (Tinnivelly Senna).—The leaflets of *Cassia elongata*. From plants cultivated in Southern India.

Characters—About two inches long, lanceolate, acute, unequally oblique at the base, flexible, entire, green, without any admixture; odour and taste those of Alexandrian Senna.

Preparations.

May be used in place of Alexandrian Senna.

CASSIÆ PULPA (Cassia Pulp).—The pulp obtained from the pods of the purging Cassia, *Cassia Fistula*. Imported from the East Indies, or recently extracted from pods imported from the East or West Indies.

Characters of the pods—About a foot or upwards in length, slightly curved, woody, indehiscent, black, rounded, divided by septa into cells, each containing a seed and viscid pulp. *Of the pulp*: blackish-brown, viscid, sweet in taste, and somewhat sickly in odour, usually containing the seeds and dissepiments.

Preparation.

Confectio Sennæ 1 part in 8, nearly.

COPAIBA (Copaiva).—The oleo-resin obtained from incisions made in the trunk of *Copaifera multijuga*, and other species of *Copaifera*. Chiefly from the valley of the Amazon.

Characters and Tests—About the consistence of olive oil, light yellow, transparent, with a peculiar odour, and an acrid aromatic taste. Perfectly soluble in an equal volume of benzol. Does not become gelatinous after having been heated to 270°. Is not fluorescent.

Dose— $\frac{1}{2}$ to 1 fluid drachm.

Preparation.

Oleum Copaibæ.

TAMARINDUS (Tamarind).—The preserved pulp of the fruit of *Tamarindus Indica*. Imported from the West Indies.

LEGUMINOSÆ.

Characters and Test—A brown sweetish sub-acid pulp preserved in sugar, containing strong fibres and brown shining seeds each enclosed in a membranous coat. A piece of bright iron left in contact with the pulp for an hour does not exhibit any deposit of copper.

Preparation.

Confectio Sennæ 9 parts to 75.

HÆMATOXYLI LIGNUM (Logwood).—The sliced heart-wood of *Hæmatoxylum Campechianum*. Imported from Campeachy, Honduras, and Jamaica.

Characters—The logs are externally of a dark colour, internally they are reddish-brown; the chips have a feeble agreeable odour, and a sweetish taste; a small portion chewed imparts to the saliva a dark pink colour.

Preparations.

Decoctum Hæmatoxyli 1 ounce to 1 pint.
Extractum Hæmatoxyli,

Sub-Order III. Mimoseæ.

ACACIÆ GUMMI (Gum Acacia).—A gummy exudation from the stems of one or more undetermined species of *Acacia*.

Characters and Tests—In spheroidal tears usually from half an inch to an inch in length, nearly colourless, and opaque from numerous minute cracks, or in fragments with shining surfaces; brittle; bland and mucilaginous in taste; insoluble in alcohol, but soluble in water. The aqueous solution forms with subacetate of lead an opaque white jelly. If an aqueous solution of iodine be added to the powder, or to a solution formed with boiling water and cooled, there is no appearance of a violet or blue colour.

Preparations containing Gum Acacia.

Mistura Cretæ	...	...	...	...	1 part in 34.
Mistura Guaiaci	...	...	...	...	1 part in 85.
Mucilago Acaciæ	...	...	...	...	1 part in 2½.
Pulvis Amygdalæ compositus	...	...	...	...	1 part in 13.
Pulvis Tragacanthæ compositus	...	...	...	...	1 part in 13.
Trochisci, in all.					

Other Plants of the order—The following are officinal in the Indian Pharmacopœia. *CÆSALPINIA BONDUCELLA*, *Bonduc*. The seeds are tonic and bitter. *MUCUNA PRURIENS*, *Coerhage*. *BUTEA FRONDOSA*, *Bengal Kino*, similar in properties to Kino. *ABRUS PRECATORIUS*, *Indian Liquorice* plant, a substitute for Liquorice. *ARACHIS HYPOGEA*, *Ground Nut*, affording an excellent bland oil, sometimes employed in this country, and largely so in India and France. The *Black or Acacia Catechu*, extract of *CATECHU NIGRUM*, formerly officinal also in the London Pharmacopœia.

ROSACEÆ.

Order XXI. ROSACEÆ.

Stem herbaceous or woody. Leaves alternate, usually stipulate. Flowers regular. Calyx four or five lobed. Petals as many as sepals, free, inserted on the calyx. Stamens indefinite. Pistil very various. In *Pomeæ* the fruit, a Pome, is formed by the carpels, and the succulent receptacular cupule crowned by the calyx limb or its scar, with cells enclosing seeds.. In *Rosææ* the carpels, which are numerous, are inserted on the bottom or inner wall of the receptacular cupule, or they are sometimes free and arranged in a head on a conical receptacle; and in *Amygdalææ* the carpel is solitary, ripening into a drupe.

Examples for study—Apple, Rose, Cherry.

AMYGDALA DULCIS (Sweet Almond).—The seed of the sweet almond tree, *Amygdalus communis*, *var. dulcis*. Cultivated about Malaga.

Characters—Above an inch in length, lanceolate, acute, with a clear cinnamon-brown seed coat, and a bland sweetish nutty-flavoured kernel. Does not evolve the odour of bitter almonds when bruised with water.

Preparations.

Oleum Amygdalæ.

Pulvis Amygdalæ compositus 8 parts in 13.

AMYGDALA AMARA (Bitter Almond).—The seed of the bitter almond tree, *Amygdalus communis*, *var. amara*. Brought chiefly from Mogadore.

Characters—Resembles the sweet almond in appearance, but is rather broader and shorter; has a bitter taste, and when rubbed with a little water emits a characteristic odour. Yields by expression, Oleum Amygdalæ; and by distillation with water Oleum Amygdalæ Amaræ, Essential Oil of Almonds. The latter not officinal.

PRUNUM (Prune).—The dried drupe of the Plum, *Prunus domestica*. From Southern Europe.

Preparation.

Confectio Sennæ 1 part to 12½.

ROSACEÆ.

LAUROCERASI FOLIA (Cherry-laurel Leaves).

—The fresh leaves of *Prunus Laurocerasus*. The Common or Cherry Laurel.

Characters—Ovate-lanceolate or elliptical, distantly toothed, furnished with glands at the base, smooth and shining, deep green, on strong short footstalks; emitting a ratafia odour when bruised.

Preparation.

Aqua Laurocerasi 1 pound to 1 pint.

CUSO (Kousso).—The flowers and tops of *Brayera anthelmintica*. Collected in Abyssinia.

Characters—Flowers small, reddish-brown, on hairy stalks, outer limb of calyx five-parted, the segments oblong or oblong-lanceolate, reticulated.

Dose— $\frac{1}{4}$ to $\frac{1}{2}$ ounce.

Preparation.

Infusum Cusso... .. $\frac{1}{4}$ ounce to 4 fl. ounces.

ROSÆ CANINÆ FRUCTUS (Fruit of the Dog-rose—Hips).—The ripe fruit of the Dog Rose, *Rosa canina*, and other indigenous allied species.

Characters—An inch or more in length, ovate, scarlet, smooth, shining; taste sweet, subacid, pleasant.

Preparation.

Confectio Rosæ caninæ.

ROSÆ GALLICÆ PETALA (Red-rose Petals).

—The fresh and dried unexpanded petals of *Rosa gallica*. From plants cultivated in Britain.

Characters—Colour fine purplish-red, retained after drying; taste bitterish, feebly acid, and astringent; odour roseate, developed by drying.

Preparations.

Confectio Rosæ Gallicæ ... 1 part fresh petals in 4.
 Infusum Rosæ Acidum ... $\frac{1}{2}$ ounce dried petals to 1 pint.
 Syrupus Rosæ Gallicæ.

ROSÆ CENTIFOLIÆ PETALA (Cabbage-rose Petals).—The fresh petals, fully expanded, of *Rosa centifolia*. From plants cultivated in Britain.

Characters—Taste sweetish, bitter, and faintly astringent: odour roseate; both readily imparted to water.

Preparation.

Aqua Rosæ 10 pounds to 1 gallon.

ROSACEÆ—CUCURBITACEÆ.

Other Plants of the order Rosaceæ—PRUNUS VIRGINIANA, the *Wild Cherry*, considerably prescribed in this country, is officinal in the United States Pharmacopœia; as also is RUBUS CANADENSIS, the *American Blackberry*, of which a syrup is made.

Order XXII. CUCURBITACEÆ.

Herbs, generally succulent; prostrate; or climbing by means of tendrils. Leaves alternate, usually palmi-nerved, often cordate. Flowers monœcious or diœcious. Calyx five-toothed. Corolla monopetalous, rotate, or campanulate, often confluent with the calyx. *Barren flower*—Stamens usually five, epipetalous, anthers two-celled, usually long and sinuous. *Fertile flower*—Ovary inferior, usually composed of three to five carpels, coherent, stigmas thickened. Fruit inferior, usually fleshy; a pepo, or rarely a berry, usually indehiscent, sometimes opening elastically at the base by separation of the peduncle (*Ecbalium*). Seeds usually numerous, placentas parietal.

Examples for study—White Bryony and the Cucumber.

ECBALII FRUCTUS (Squirting Cucumber Fruit).—The fruit, very nearly ripe, of the Squirting Cucumber, Ecbalium Officinatum.

Preparation.

Elaterium.

Dose of Elaterium—1-16th to $\frac{1}{2}$ grain.

COLOCYNTHIDIS PULPA (Colocynth Pulp).—

The dried decorticated fruit, freed from seeds, of Citrullus Colocynthis. Imported chiefly from Smyrna, Trieste, France, and Spain.

Characters—Light, spongy, white or yellowish-white in colour, intensely bitter in taste.

Dose, in Powder—2 to 8 grains.

Preparations.

Extractum Colocynthis compositum	... 1 part to 4 $\frac{1}{2}$, nearly.
Pilula Colocynthis composita	... 1 part in 6, nearly.
Pilula Colocynthis et Hyoscyami	... 1 part in 9, nearly.

Other Plants of the order Cucurbitaceæ—CUCURBITA PEPO, the *White Gourd*, is officinal in the Pharmacopœia of the United States. The BRYONIA DIOICA, *White Bryony*, mentioned above, is well known for its large root, offered as Mandrake, a popular remedy for black eyes.

MYRTACEÆ.

Order XXIII. MYRTACEÆ.

CARYOPHYLLUM (Cloves).—The dried unexpanded flower buds of *Caryophyllus aromaticus*. Cultivated in Penang, Bencoolen, and Amboyna.

Characters and Tests—About six lines long, dark reddish-brown, plump and heavy, consisting of a nearly cylindrical body surmounted by four teeth and a globular head, with a strong fragrant odour, and a bitter spicy pungent taste. It emits oil when indented with the nail.

Preparations.

Infusum Auranti compositum	...	60 grains to 1 pint.
Infusum Caryophylli	... ..	$\frac{1}{2}$ ounce to 1 pint.
Mistura Ferri Aromatica	... ..	$\frac{1}{4}$ ounce to 16 fl. ounces.
Oleum Caryophylli.		
Vinum Opii	... ..	75 grains to 1 pint.

PIMENTA (Pimento).—The dried unripe berries of the Allspice tree, *Eugenia Pimenta*. West Indies.

Characters—Of the size of a small pea, brown, rough, crowned with the teeth of the calyx, yellowish within, and containing two dark brown seeds. Odour and taste aromatic, hot, and peculiar.

Preparations.

Aqua Pimentæ	... ..	14 ounces to 1 gallon.
Oleum Pimentæ.		
Syrupus Rhamni.		

OLEUM CAJUPUTI (Oil of Cajuput).—The Oil distilled from the leaves of *Melaleuca Minor*. Imported from Batavia and Singapore.

Characters—Very mobile, transparent, of a fine pale bluish-green colour. It has a strong agreeable odour, and a warm aromatic taste, and leaves a sensation of coldness in the mouth.

GRANATI RADICIS CORTEX (Pomegranate Root Bark).—The dried bark of the root of *Punica Granatum*. Obtained from the South of Europe.

Characters—In quills or fragments of a greyish-yellow colour externally, yellow internally, having a short fracture, little odour, and an astringent slightly bitter taste.

Preparation.

Decoctum Granati Radicis	2 ounces to 1 pint.
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MYRTACEÆ—UMBELLIFERÆ.

Other Plants of the order Myrtaceæ—The EUCALYPTUS GLOBULUS has been recently introduced in various preparations, as a febrifuge. The EUCALYPTUS RESINIFERA yields a red gum called *Botany Bay Kino*. MYRCIA ACRIS, used in the preparation of Bay Rum, is officinal in the United States Pharmacopœia. CORNUS FLORIDA, of the order CORNEÆ, *Dogwood Bark*, a substitute for Peruvian Bark, is officinal in the United States Pharmacopœia.

Order XXIV. UMBELLIFERÆ.

Herbaceous or rarely woody plants. Stem knotty, hollow, or full of pith. Leaves alternate, petiole dilated at the base, usually compound or stipulate. Flowers arranged in umbels and umbellules, sometimes in a head. Calyx five-lobed or almost wanting. Petals five, valvate or sub-imbricate in bud, inserted outside an epigynous disk, free, caducous, the point generally inflexed. Stamens five, alternate with the petals. Carpels two, coherent into a two-celled ovary, styles two. Fruit a cremocarp, consisting of two mericarps adhering by their face to a common axis, *Carpophore*. Resiniferous canals called vittæ are developed in the thickness of the pericarp.

Examples for study—Chervil and Hemlock.

FŒNICULI FRUCTUS (Fennel Fruit).—The fruit of *Fœniculum dulce*. Imported from Malta.

Characters—About three lines long and one line broad; elliptical, slightly curved, beaked, having eight pale-brown longitudinal ribs, the two lateral being double; taste and odour aromatic.

Preparation.

Aqua Fœniculi 1 pound to 1 gallon.

ANETHI FRUCTUS (Dill Fruit).—The fruit of *Anethum graveolens*. Cultivated in England or imported from Middle and Southern Europe.

Characters—Oval, flat, about a line and a half in length, with a pale membranous margin. Odour aromatic, taste warm, somewhat bitter.

Preparations.

Aqua Anethi 1 pound to 1 gallon.
Oleum Anethi.

UMBELLIFERÆ.

CARUI FRUCTUS (Caraway Fruit).—The dried fruit of *Carum Carui*. Cultivated in England and Germany.

Characters—Fruits usually separating into two parts which are about two lines long, curved, tapering at each end, brown, with five paler longitudinal ridges; having an agreeable aromatic odour and spicy taste.

Preparations.

Aqua Carui	...	...	...	1 pound to 1 gallon.
Confectio Opii	...	...	...	1 part in 10, nearly.
Confectio Piperis	...	...	...	3 parts in 20.
Oleum Carui.				
Pulvis Opii compositus...	...	...	...	1 part in 2½.
Tinctura Cardamomi composita	...	...	...	¼ ounce to 1 pint.
Tinctura Sennæ	...	...	...	½ ounce to 1 pint.

CORIANDRI FRUCTUS (Coriander Fruit).—The dried ripe fruit of *Coriandrum sativum*. Cultivated in Britain.

Characters—Globular, nearly as large as white pepper, beaked, finely ribbed, yellowish-brown; has an agreeable aromatic odour and flavour.

Preparations.

Confectio Sennæ	...	...	...	1 part in 25.
Mistura Gentianæ...	...	...	...	60 grains to 1 pint.
Oleum Coriandri.				
Syrupus Rhei.				
Tinctura Rhei	...	...	...	¼ ounce to 1 pint.
Tinctura Sennæ	...	...	...	½ ounce to 1 pint.

OLEUM ANISI (Oil of Aniseed).—The oil distilled in Europe from the fruit of *Pimpinella Anisum*.

Characters of the Fruit—Half fruits with five filiform equal ridges, the lateral ones being marginal. Thicker and more ovate than Caraway fruits.

See also *Illicium Anisatum* (Magnoliaceæ).

SUMBUL RADIX (Sumbul Root).—The dried transverse sections of the root of a plant the botanical history of which is unknown. Imported from Russia and also from India.

Characters—The pieces are nearly round, from 2½ inches to 5 inches in diameter, and from ¾ to 1½ inch in thickness. They are covered on the

UMBELLIFERÆ.

outer edge with a dusky brown rough bark, frequently beset with short bristly fibres. The interior is porous, and consists of irregular, easily separated fibres. It has a strong odour, resembling that of musk. The taste is at first sweetish, becoming after a time bitterish and balsamic. That brought from India differs from the Russian, being closer in texture, more dense and firm, and of a reddish tint.

Preparation.

Tinctura Sumbul 54½ grains to 1 fluid ounce.

CONII FOLIA (Hemlock Leaves).—The fresh leaves and young branches of Spotted Hemlock, *Conium maculatum*; also the leaves separated from the branches and carefully dried; gathered from wild British plants when the fruit begins to form.

Characters—Fresh leaves decompose, smooth, arising from a smooth stem with dark purple spots; dried leaves of a full green colour and characteristic odour. The leaf rubbed with solution of potash gives out strongly the odour of conia.

Dose, in powder—2 to 8 grains.

Preparations.

Cataplasma Conii.
Extractum Conii.
Succus Conii.

CONII FRUCTUS (Hemlock Fruit).—The dried ripe fruit of *Conium maculatum*, *Linn.*, Spotted Hemlock.

Characters—Broadly ovate, compressed laterally; half-fruit with five waved or crenated ridges. Reduced to powder and rubbed with solution of potash, they give out strongly the odour of conia.

Preparation.

Tinctura Conii 54½ grains to 1 fluid ounce.

AMMONIACUM (Ammoniacum).—A gum-resinous exudation from *Dorema Ammoniacum*. Collected in Persia and the Punjaub.

Characters—In tears or masses; the tears from two to eight lines in diameter, pale cinnamon-brown, breaking with a smooth, shining, opaque white surface; the masses composed of agglutinated tears; hard and brittle when cold, but readily softening with heat. Has a faint odour,

UMBELLIFERÆ.

and a bitter acrid nauseous taste. Rubbed with water it forms a nearly-white emulsion.

Dose—10 to 20 grains.

Preparations.

Emplastrum Ammoniaci cum Hydrargyro...	12 parts in 15.
Emplastrum Galbani	1 part in 11.
Mistura Ammoniaci	13½ grains to 1 fl. oz., nearly
Pilula Scillæ composita	1 part in 6.
Pilula Ipecacuanhæ cum Scilla	1 part in 7.

ASSAFŒTIDA (*Assafoetida*).—A gum-resin obtained by incision from the living root of *Narthex Assafoetida*. In Afghanistan and the Punjaub.

Characters—In irregular masses, partly composed of tears, moist or dry. The colour of a freshly cut or broken piece is opaque white, but gradually becomes purplish-pink, and ultimately dull-yellowish or pinkish-brown. Taste bitter, acrid; odour fetid, alliaceous, and persistent. It dissolves almost entirely in rectified spirit.

Dose—5 to 20 grains.

Preparations.

Enema Assafoetidæ	30 grains to 4 fl. ounces.
Pilula Aloes et Assafoetidæ	1 part in 4.
Pilula Assafoetidæ composita	1 part in 3½.
Spiritus Ammonię Fœtidus	33 grains to 1 fluid ounce.
Tinctura Assafoetidæ	54½ grains to 1 fl. ounce.

GALBANUM (*Galbanum*).—A gum-resin, derived from an unascertained umbelliferous plant (said to be *Ferula Galbaniflua*). Imported from India and the Levant.

Characters—In irregular tears, about the size of a pea, usually agglutinated into masses; of a greenish-yellow colour, translucent, having a strong disagreeable odour, and an acrid bitter taste.

Preparations.

Emplastrum Galbani	1 part in 11.
Pilula Assafoetidæ composita	1 part in 3½.

Other Plants of the order Umbelliferæ—The following are officinal in the Pharmacopœia of India :—**CARUM** (**PTYCHOTIS**) **AJOWAN**, *Ajwain* or *Onum plant*, yielding an aromatic oil by distillation, somewhat resembling Oil of Thyme. **HYDROCOTYLE ASIATICA**, *Indian Pennywort*, the leaves of which afford an alterative tonic.

DIVISION II.

MONOPETALOUS OR COROLLIFLORAL.

Flowers (with some exceptions) furnished with both sepals and petals, the latter connate. The stamens are inserted—1, on the ovary, which is inferior, the calyx being adherent ; 2, on the thalamus, the ovary being superior ; 3, on the corolla, the ovary being superior.

Order XXV. CAPRIFOLIACEÆ.

SAMBUCI FLORES (Elder Flowers).—The fresh flowers of *Sambucus nigra*. From indigenous plants.

Characters—Flowers small, white, fragrant, crowded in large cymes.

Preparation.

Aqua Sambuci... 10 pounds to 1 gallon.

Order XXVI. CINCHONACEÆ.

IPECACUANHA (*Ipecacuanha*).—The dried root of *Cephaëlis Ipecacuanha*. Imported from Brazil.

Characters—In pieces three or four inches long, about the size of a small quill, contorted and irregularly annulated. Colour, brown of various shades. It consists of two parts, the cortical or active portion which is brittle, and a slender tough white woody centre. Powder pale brown, with a faint nauseous odour, and a somewhat acrid and bitter taste.

Dose—As an expectorant, $\frac{1}{2}$ grain to 2 grains ; as an emetic, 15 to 30 grains.

Preparations.

Pilula Conii composita...	...	...	1 part in 6.
Pilula Ipecacuanhæ cum Scilla	...	...	1 part in 16 $\frac{1}{2}$, nearly.
Pulvis Ipecacuanhæ compositus	...	...	1 part in 10.
Trochisci Ipecacuanhæ	...	...	$\frac{1}{4}$ grain in each lozenge.
Trochisci Morphæ et Ipecacuanhæ	...	...	one-twelfth grain in each lozenge.
Vinum Ipecacuanhæ	...	...	22 grains to 1 fl. ounce.

CINCHONÆ FLAVÆ CORTEX (Yellow-Cinchona Bark).—The bark of *Cinchona Calisaya*. Collected in Bolivia and Southern Peru.

Characters—In flat pieces, uncoated or deprived of the periderm, rarely in coated quills, from six to eighteen inches long, one to three

CINCHONACEÆ.

inches wide, and two to four lines thick, compact and heavy; outer surface brown, marked by broad shallow irregular longitudinal depressions; inner surface tawny-yellow, fibrous; transverse fracture shortly and finely fibrous. Powder cinnamon-brown, somewhat aromatic, persistently bitter.

Test—Boil 100 grains of the bark, reduced to very fine powder, for a quarter of an hour in a fluid ounce of distilled water acidulated with ten minims of hydrochloric acid; and allow it to macerate for twenty-four hours. Transfer the whole to a small percolator, and after the fluid has ceased to drop add at intervals about an ounce and a half of similarly acidulated water, or until the fluid which passes through is free from colour. Add to the percolated fluid solution of subacetate of lead, until the whole of the colouring matter has been removed, taking care that the fluid remains acid in reaction. Filter and wash with a little distilled water. To the filtrate add about thirty-five grains of caustic potash, or as much as will cause the precipitate which is at first formed to be nearly redissolved, and afterwards six fluid drachms of pure ether. Then shake briskly, and, having removed the ether, repeat the process twice with three fluid drachms of ether, or until a drop of the ether employed leaves on evaporation scarcely any perceptible residue. Lastly, evaporate the mixed ethereal solutions in a capsule. The residue, which consists of nearly pure Quinia, when dry, should weigh not less than 2 grains, and should be readily soluble in diluted sulphuric acid.

Dose, in powder—10 to 60 grains.

Preparations.

Decoctum Cinchonæ flavæ	...	...	27½ grains to 1 fluid ounce.
Extractum Cinchonæ flavæ liquidum	...	...	1 pound to 4 fluid ounces.
Infusum Cinchonæ flavæ...	...	...	22 grains to 1 fluid ounce.
Quiniæ Sulphas.			
Tinctura Cinchonæ flavæ...	...	...	88 grains to 1 fluid ounce.

CINCHONÆ PALLIDÆ CORTEX (Pale-Cinchona Bark).—The bark of *Cinchona Condaminea*, D.C., *vars.* *chahuarguera Pavon*, and *crispa Tafalla*. Collected about Loxa in Ecuador.

Characters—From half a line to a line thick, in single or double quills, which are from six to fifteen inches long, two to eight lines in diameter, brittle, easily splitting longitudinally, and breaking with a short transverse fracture; outer surface brown and wrinkled, or grey and speckled with adherent lichens, with or without numerous transverse cracks; inner surface bright orange or cinnamon-brown; powder pale brown, slightly bitter, very astringent.

Test—200 grains of the bark, treated in the manner directed in the test for yellow cinchona bark, with the substitution of chloroform for ether, should yield not less than 1 grain of alkaloids.

Dose, in powder—10 to 60 grains.

Preparations.

Mistura Ferri aromatica	...	...	1 ounce to 16 fluid ounces.
Tinctura Cinchonæ composita	...	...	44 grains to 1 fluid ounce.

CINCHONÆ RUBRÆ CORTEX (Red-Cinchona Bark).—The bark of *Cinchona succirubra*. Collected on the western slopes of Chimborazo.

Characters—In flat or incurved pieces, less frequently in quills, coated with the periderm, varying in length from a few inches to two feet, from one to three inches wide, and two to six lines thick, compact and heavy; outer surface brown or reddish-brown, rarely white from adherent lichens, rugged or wrinkled longitudinally, frequently warty, and crossed by deep transverse cracks; inner surface redder; fractured surface often approaching to brick-red; transverse fracture finely fibrous; powder red-brown; taste bitter and astringent.

Test—100 grains of the bark, treated in the manner directed in the test for yellow cinchona bark, with the substitution of chloroform for ether, should yield not less than 1·5 grains of alkaloids.

Dose, in powder—10 to 60 grains.

CATECHU PALLIDUM (Pale Catechu).—An extract of the leaves and young shoots of *Uncaria Gambir*. Prepared at Singapore and in other places in the Eastern Archipelago.

Characters—In cubes, or masses formed of coherent cubes; the former about an inch in diameter, externally brown, internally ochrey-yellow or pale brick-red, breaking easily with a dull earthy fracture. Taste bitter, very astringent, and mucilaginous, succeeded by slight sweetness. Entirely soluble in boiling water. The decoction when cool is not rendered blue by iodine.

Dose—10 to 30 grains.

Preparations.

Infusum Catechu	...	...	16 grains to 1 fl. ounce.
Pulvis Catechu compositus	...	...	1 part in 2½.
Tinctura Catechu	...	...	54½ grains to 1 fl. ounce.
Trochisci Catechu	...	...	1 grain in each lozenge.

Other Plants of the order Cinchonaceæ—*COFFEA ARABICA*, *Coffee*, officinal in the United States Pharmacopœia, is a member of this order, which by many botanists is named *Rubiaceæ*.

Order XXVII. VALERIANACEÆ.

VALERIANÆ RADIX (Valerian Root).—The dried root of *Valeriana officinalis*. From plants indigenous to and also cultivated in Britain. Collected in autumn, wild plants being preferred.

Characters—A short yellowish-white rhizome, with numerous fibrous roots about two or three inches long; of a bitter taste and penetrating

COMPOSITÆ.

odour, agreeable in the recent root, becoming fetid by keeping ; yielding volatile oil and valerianic acid when distilled with water.

Dose, in powder—10 to 30 grains.

Preparations.

Infusum Valerianæ	...	...	...	240 grains to 1 pint.
Tinctura Valerianæ	...	...	...	2½ ounces to 1 pint.
Tinctura Valerianæ ammoniata	...	...	...	2½ ounces to 1 pint.

Order XXVIII. COMPOSITÆ.

Plants generally perennial, mostly herbaceous. Leaves alternate, often very much cut, exstipulate. Inflorescence indefinite, but forming collectively a definite inflorescence termed a capitulum, being composed of flowers inserted on a common receptacle, surrounded by an involucre formed of imbricated bracts. Florets hermaphrodite, unisexual or neuter, frequently varying in one capitulum. Calyx frequently feathered, then termed pappose. Corolla tubular or ligulate, sometimes bilabiate. Stamens generally five, inserted on the corolla. Anthers cohering into a tube which sheaths the style (*syngenesious*). Ovary inferior, fruit dry, indehiscent, one-celled.

Examples for study—The Dandelion, and the Daisy.

ANTHEMIDIS FLORES (Chamomile Flowers).

—The dried single and double flower heads of the common chamomile, *Anthemis nobilis*. Wild and cultivated.

Characters—The single variety consists of both yellow tubular, and white strap-shaped florets ; the double, of white strap-shaped florets only ; all arising from a conical scaly receptacle ; both varieties, but especially the single, are bitter and very aromatic.

Preparations.

Extractum Anthemidis.				
Infusum Anthemidis...	...	...	...	½ ounce to 10 fl. ounces.
Oleum Anthemidis.				

ARNICÆ RADIX (Arnica Root).—The dried rhizome and rootlets of *Arnica montana*. Collected in the mountainous parts of Middle and Southern Europe.

Characters—Rhizome from one to three inches long, and two or three lines thick, cylindrical, contorted, rough from the scars of the coriaceous

COMPOSITE.

leaves, and furnished with numerous long slender fibres ; has a peppery taste and peculiar odour.

Preparation.

Tinctura Arnicæ 1 ounce to 1 pint.

PYRETHRI RADIX (Pellitory Root).—The root of *Anacyclus Pyrethrum*, imported from the Levant.

Characters—In pieces about the length and thickness of the little finger, covered with a thick brown bark, studded with black shining points. Breaks with a resinous fracture and presents internally a radiated structure. When chewed, it excites a prickling sensation in the lips and tongue, and a glowing heat.

Preparation.

Tinctura Pyrethri... .. 4 ounces to 1 pint.

SANTONICA (Santonica.)—The unexpanded flower-heads of an undetermined species of *Artemisia*. Imported from Russia.

Characters—Flower-heads rather more than a line in length and nearly half a line in breadth, fusiform, blunt at each end, pale greenish brown, smooth ; resembling seeds in appearance, but consisting of imbricated involucreal scales with a green midrib, enclosing four or five tubular flowers ; odour strong, taste bitter, camphoraceous. Flower-heads not round or hairy.

Dose—10 to 60 grains.

Preparation.

Santoninum.

LACTUCA (Lettuce).—The flowering herb of *Lactuca virosa*, a native of Britain.

Preparation.

Extractum Lactucæ.

TARAXACI RADIX (Dandelion Root).—The fresh and dried roots of *Taraxacum Dens Leonis*. Gathered between September and February, from meadows and pastures in Britain.

Characters and Tests—Tap-shaped roots, smooth and dark-brown externally, white within, easily broken, and giving out an inodorous bitter milky juice, which becomes pale-brown by exposure. Not wrinkled or pale-coloured externally ; juice not watery ; any adherent leaves runcinate and quite smooth.

Preparations.

Decoctum Taraxaci (dried) 1 ounce to 1 pint.
Extractum Taraxaci (fresh).
Succus Taraxaci (fresh).

LOBELIACEÆ—ERICACEÆ—STYRACACEÆ.

Other Plants of the order Compositæ—ARTEMISIA ABSINTHIUM, the well-known *Wormwood*; ERIGERON HETEROPHYLLUM and PHILADELPHICUM, *Fl seabane*, diuretics; and EUPATORIUM PERFOLIATUM, *Thoroughwort*, a tonic stimulant, are all officinal in the United States Pharmacopœia.

Order XXIX. LOBELIACEÆ.

LOBELIA (*Lobelia*).—The dried flowering herb of *Lobelia inflata*. Imported from North America.

Characters—Stem angular; leaves alternate, ovate, toothed, somewhat hairy beneath; capsule ovoid, inflated, ten-ribbed; herb acrid. Usually in compressed rectangular parcels.

Preparations.

Tinctura Lobeliæ...	...	54½	grains to 1 fluid ounce.
Tinctura Lobeliæ ætherea	...	54½	grains to 1 fluid ounce.

Order XXX. ERICACEÆ.

UVÆ URSI FOLIA (*Bearberry Leaves*).—The dried leaves of *Arctostaphylos Uva Ursi*. From indigenous plants.

Characters—Obovate entire coriaceous shining leaves, about three-fourths of an inch in length, reticulated beneath; with a strong astringent taste, and a feeble hay-like odour when powdered; the infusion giving a bluish-black precipitate with perchloride of iron. Leaves not dotted beneath nor toothed on the margin.

Preparation.

Infusum Uvæ Ursi	1 ounce to 1 pint.
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Other Plants of the order Ericaceæ—GUALTHERIA PROCUMBENS, producing the *Oil of Winter Green*, and CHIMAPHILLA UMBELLATA, *Pipsissewa*, also called *Winter Green*, and sometimes prescribed in this country, are officinal in the United States Pharmacopœia.

DIOSPYROS EMBRYOPTERIS, of the order EBENACEÆ, the fruit of which is a powerful astringent, is officinal in the Pharmacopœia of India. ISONANDRA GUTTA, *Gutta Percha Tree*, natural order SAPOTACEÆ, is officinal in the Pharmacopœia of the United States.

Order XXXI. STYRACACEÆ.

BENZOINUM (*Benzoin*).—A balsamic resin obtained from *Styrax Benzoin*. It is procured by making incisions into the bark of the tree, and allowing the

STYRACACEÆ—LOGANIACEÆ—GENTIANACEÆ.

liquid that exudes to concrete by exposure to the air.
Imported from Siam and Sumatra.

Characters—In lumps, consisting of agglutinated tears, or of a brownish mottled mass with or without white tears imbedded in it; has little taste, but an agreeable odour; gives off, when heated, fumes of benzoic acid; is soluble in rectified spirit and in solution of potash.

Preparations.

Acidum Benzoicum.

Adeps Benzoatus... 10 grains to 1 ounce.

Tinctura Benzoini composita ... 44 grains to 1 fluid ounce.

Order XXXII. LOGANIACEÆ.

NUX VOMICA (*Nux Vomica*). — The seeds of *Strychnos Nux Vomica*. Imported from the East Indies. The fruit containing them is about the size of a small apple, having a brittle orange-coloured shell and a white gelatinous pulp.

Characters—Nearly circular and flat, about an inch in diameter, umbilicated and slightly convex on one side, externally of an ash-grey colour, thickly covered with short satiny hairs, internally translucent, tough and horny, taste intensely bitter, inodorous.

Preparations.

Extractum Nucis Vomice.

Strychnia.

Tinctura Nucis Vomice ... 44 grains to 1 fl. ounce.

Other Plants of the order Loganiaceæ—*STRYCHNOS IGNATIA*, the *Ignatius Bean*, often employed in this country, is officinal in the United States Pharmacopœia, as also is *GELSEMIUM SEMPERVIRENS*, the *Yellow Jasmine*, the tincture of which has been lately introduced as a remedy for toothache, &c. *SPIGELIA MARYLANDICA*, also officinal, was once a popular remedy known as *Indian Pink*. In the allied order of *APOCYNÆE* is *ALSTONIA SCHOLARIS*, an astringent tonic, officinal in the Indian Pharmacopœia.

Order XXXIII. GENTIANACEÆ.

Annual or perennial herbs, rarely shrubs. Leaves opposite, very rarely alternate, nearly always entire, simple, exstipulate. Flowers mostly regular, axillary or terminal. Calyx inferior, persistent, usually with five divisions. Corolla monopetalous, hypogynous, funnel or salver shaped,

GENTIANACEÆ—ASCLEPIADACEÆ.

persistent. Stamens inserted on the corolla tube or throat, alternate with its lobes. Carpels two, connate, seeds numerous.

Examples for study—The Gentianella or other garden Gentians.

GENTIANÆ RADIX (Gentian Root).—The dried root of *Gentiana lutea* (Yellow Gentian). Collected in the mountainous districts of Central and Southern Europe.

Characters—From half an inch to one inch in thickness, several inches in length, often twisted, much wrinkled, or marked with close transverse rings; brown externally, yellow within, tough and spongy; taste at first sweetish, afterwards very bitter.

Preparations.

Extractum Gentianæ.

Infusum Gentianæ compositum ... 120 grains to 1 pint.

Mistura Gentianæ ... ½ ounce to 1 pint.

Tinctura Gentianæ composita ... 1½ ounces to 1 pint.

CHIRATA (Chiretta).—The entire plant. *Ophelia Chirata*. Collected in Northern India.

Characters—Stems about three feet long, of the thickness of a goose-quill, round; smooth, pale-brown, branched; branches opposite; flowers small, numerous, panicled, the whole plant intensely bitter.

Preparations.

Infusum Chirate ... ½ ounce to 1 pint.

Tinctura Chirate ... 2½ ounces to 1 pint.

Other Plants of the order Gentianaceæ—Various indigenous plants of this order are still popularly used as substitutes for Gentian; amongst these are *ERYTHRÆA CENTAURIUM*, *Centaury*, and *MENYANTHES TRI-FOLIATA*, *Buckbean*. They will also serve as examples of the order, but are rather local.

Order XXXIV. ASCLEPIADACEÆ.

HEMIDESMI RADIX (Hemidesmus Root).—The dried root of *Hemidesmus indicus*. Imported from India.

Characters—Yellowish-brown, cylindrical, tortuous, furrowed and with annular cracks, having a fragrant odour, and a very agreeable flavour.

Preparation.

Syrupus Hemidesmi ... 1 ounce to 10½ ounces.

ASCLEPIADACEÆ—CONVOLVULACEÆ.

Other Plants of the order Asclepiadaceæ—*CALATROPIS GIGANTEA*, *Mudar*, officinal in the Indian Pharmacopœia, is much employed in that country in cutaneous affections. It is also emetic in large doses. The latter property belongs to *TYLOPHORA ASTHMATICA*, also officinal in that Pharmacopœia. *GONOLOBUS CUNDURANGO*, the recently extolled but now almost exploded remedy for cancer, belongs to this order.

Order XXXV. CONVOLVULACEÆ.

Herbaceous or woody plants, generally twining. Leaves alternate, exstipulate. Calyx of five sepals, usually free, persistent. Corolla monopetalous, hypogynous, campanulate, or funnel shaped, deciduous, contorted in æstivation. Stamens five, inserted at the bottom of the corolla tube. Fruit capsular, one-four celled.

Examples for study—The Garden or Wild Convolvulus.

SCAMMONIÆ RADIX (Scammony Root).—The dried root of *Convolvulus Scammonia*. From Syria and Asia Minor.

Characters—Tap-shaped roots, sometimes three inches in diameter at the top, brown without, white within, slightly odorous but tasteless. Ether agitated with the powder and evaporated leaves a residue having the properties of scammony resin.

Preparation.

Resina Scammoniaë.

SCAMMONIUM (Scammony).—A gum resin, obtained by incision from the living root of *Convolvulus Scammonia*, chiefly in Asia Minor.

Characters and Tests—Ash-grey, and rough externally; fresh fracture resinous, splintery, shining, black when dry; odour and flavour cheesy; causes, when chewed, a slight prickly sensation in the back of the throat; easily triturated into a dirty-grey powder, and converted with water into a smooth emulsion. It does not effervesce with hydrochloric acid. Boiling water agitated with the powder, cooled and filtered, does not strike a blue colour with tincture of iodine. Ether removes from 80 to 90 per cent. of resin; and what remains is chiefly soluble gum, with a little moisture.

Dose—5 to 10 grains.

Preparations.

Confectio Scammonii	...	...	1 part in 3, nearly.
Pilula Colocyntidis composita	...	...	1 part in 3, nearly.
Pilula Colocyntidis et Hyoscyami	...	...	1 part in 4½, nearly.
Pulvis Scammonii compositus	...	...	1 part in 2.
Resina Scammoniaë.			

CONVOLVULACEÆ—SOLANACEÆ.

JALAPA (Jalap).—The dried tubercules of *Exogonium Purga*. Imported from Mexico.

Characters—Varying from the size of a nut to that of an orange, ovoid, the larger tubercules frequently incised, covered with a thin brown wrinkled cuticle; presenting, when cut, a yellowish-grey colour, with dark brown concentric circles.

Dose—10 to 30 grains.

Preparations.

Extractum Jalapæ.

Pulvis Jalapæ compositus ... 1 part in 3.

Pulvis Scammonii compositus ... 3 parts in 8.

Resina Jalapæ.

Tinctura Jalapæ ... 54½ grains to 1 fl. ounce.

Other Plant of the order Convolvulaceæ—*PHARBITIS NIL*, *Koladana*, a cathartic, resembling Jalap in its action; is officinal in the Indian Pharmacopœia.

Order XXXVII. SOLANACEÆ.

Herbs or shrubs. Leaves alternate, the upper often geminate, simple, exstipulate. Calyx monosepalous, mostly with five segments. Corolla more or less regular. Æstivation valvate, or induplicate valvate. Stamens inserted on the corolla tube, alternate with the lobes of the corolla. Anthers introrse, dehiscence longitudinal or porous. Ovary usually two-celled, style simple, fruit a capsule or a berry, seeds numerous.

Example for study—The Woody Nightshade.

CAPSICI FRUCTUS (Capsicum Fruit).—The dried ripe fruit of *Capsicum fastigiatum*. Imported from Zanzibar, and distinguished in commerce as Guinea Pepper and Pod Pepper.

Characters—Pod membranous, from five to eight lines long, two lines broad, straight, conical, pointed, smooth, shining, but somewhat corrugated, orange-red, intensely hot in taste.

Dose—½ to 1 grain.

Preparation.

Tinctura Capsici ... 16½ grains to 1 fl. ounce.

DULCAMARA (Dulcamara).—The dried young branches of *Solanum Dulcamara*. Bittersweet or Woody Nightshade. From indigenous plants which have shed their leaves.

SOLANACEÆ—ATROPACEÆ.

Characters—Light, hollow, cylindrical, about the thickness of a goose-quill, bitter and subsequently sweetish to the taste.

Preparation.

Infusum Dulcamaræ 2 ounces to 1 pint.

Order XXXVII. ATROPACEÆ.

The plants in this order were separated and formed by Miers into a distinct order, the distinguishing feature being that in Atropaceæ the æstivation of the corolla is always more or less imbricated, instead of valvate. The lobes of the corolla are sometimes somewhat unequal. One of the stamens—normally five—is frequently sterile; and the anthers, being either introrse or extrorse always dehisce longitudinally. The fruit is a septicidal capsule (*Tobacco*), loculicidal and septicfragal (*Datura*), a pyxidium (*Henbane*), pulpy (*Belladonna*).

Example for study—Deadly Nightshade.

BELLADONNÆ FOLIA (Belladonna Leaves).—

The fresh leaves, with the branches to which they are attached, of Deadly Nightshade, *Atropa Belladonna*, also the leaves separated from the branches and carefully dried; gathered from wild or cultivated British plants when the fruit has begun to form.

Characters—Leaves alternate, three to six inches long, ovate, acute, entire, smooth, the uppermost in pairs and unequal. The expressed juice, or an infusion, dropped into the eye, dilates the pupil.

Preparations.

Extractum Belladonnæ about 4 parts from 100.
Tinctura Belladonnæ 1 oz. to 1 pint.

BELLADONNÆ RADIX (Belladonna Root).—

The dried root of *Atropa Belladonna*. Cultivated in Britain or imported from Germany.

Characters—From one to two feet long, and from half an inch to two inches thick, branched and wrinkled, brownish-white. An infusion dropped into the eye dilates the pupil.

Preparations.

Atropia.
Linimentum Belladonnæ 1 ounce to 1 fl. ounce.

STRAMONII FOLIA (Stramonium Leaves).—

The dried leaves of *Datura Stramonium*, Thorn Apple. Collected from plants in flower, cultivated in Britain.

Characters—Large, ovate, sinuous, deeply cut; of a heavy odour, which is strongest while they are drying, and of a mawkish faintly bitter nauseous taste.

STRAMONII SEMINA (Stramonium Seeds).—

The ripe seeds of *Datura Stramonium*.

Characters—Brownish-black, reniform, flat, rough, in taste feebly bitter and mawkish; inodorous unless bruised, when they emit a peculiar heavy smell.

Preparations.

Extractum Stramonii.

Tinctura Stramonii... 54½ grains to 1 fl. ounce.

HYOSCYAMI FOLIA (Hyoscyamus Leaves).—

The fresh leaves, with the branches to which they are attached, of *Hyoscyamus niger*; also the leaves separated from the branches and carefully dried; gathered from wild, or cultivated British, biennial plants when about two-thirds of the flowers are expanded.

Characters—Leaves sinuated, clammy, and hairy. The fresh herb has a strong unpleasant odour, and a slightly acrid taste, which nearly disappear on drying. The fresh juice, dropped into the eye, dilates the pupil.

Preparations.

Extractum Hyoscyami.

Tinctura Hyoscyami ... 2½ ounces to 1 pint.

TABACI FOLIA (Leaf Tobacco).—The dried leaves of Virginian Tobacco, *Nicotiana Tabacum*. Cultivated in America.

Characters—Large mottled-brown ovate or lanceolate acuminate leaves, bearing numerous short glandular hairs; having a peculiar heavy odour and nauseous-bitter acrid taste; yielding, when distilled with solution of potash, an alkaline fluid, which has the peculiar odour of nicotia, and precipitates with perchloride of platinum and tincture of galls. Not manufactured.

Preparation.

Enema Tabaci ... 20 grains to 8 fluid ounces.

Other Plants of the order Atropaceæ—*Datura Alba*, *Dhatura*, with similar properties to *Stramonium*, is officinal in the Pharmacopœia of India.

OLEACEÆ.

Order XXVIII. OLEACEÆ.

MANNA (Manna).—A concrete saccharine exudation from the stem of *Fraxinus Ornus*. Obtained by making incisions in the stems of the trees, which are cultivated for the purpose, chiefly in Calabria and Sicily.

Characters—In stalactiform pieces from one to six inches in length, and one or two inches in width, uneven, porous, and friable, curved on one side, of a yellowish-white colour, with a faintly nauseous odour, and a sweetish taste. It consists principally of mannite, $C_6H_7O_6$ or $C_3H_7O_3$, together with common sugar and extractive matter. The mannite, which forms from 60 to 80 per cent of the manna, may be extracted by means of boiling rectified spirit, from which it will afterwards separate on cooling in colourless shining crystals. It requires five parts of cold water for its solution, and this does not undergo vinous fermentation in contact with yeast.

Dose—60 grains to 1 ounce.

OLEUM OLIVÆ (Olive Oil).—The oil expressed in the South of Europe from the fleshy pericarp of the ripe fruit drupe of *Olea Europæa*.

Characters—Pale-yellow, with scarcely any odour, and a bland oleaginous taste; congeals partially at about 36° .

Preparations.

Charta Epispastica.
 Cataplasma Lini.
 Emplastrum Ammoniaci cum Hydrargyro.
 Emplastrum Hydrargyri.
 Emplastrum Cerati Saponis.
 Emplastrum Picis.
 Emplastrum Plumbi.
 Enema Magnesiae Sulphatis.
 Linimentum Ammoniae.
 Linimentum Calcis.
 Linimentum Camphoræ.
 Unguentum Cantharidis.
 Unguentum Hydrargyri compositum.
 Unguentum Hydrargyri Nitratis.
 Unguentum Veratriæ.

In the natural order PLUMBAGINÆE is *STATICE LIMONIUM*, *var. CAROLINIANA*, *Marsh Rosemary*, official in the United States Pharmacopœia; the root is an active astringent. In PLANTAGINACEÆ is *PLANTAGO ISPAGHULA*, *Ispaghul*, demulcent and astringent, and in ACANTHACEÆ is *ANDROGRAPHIS PANICULATA*, *Karijat*, a bitter tonic and stomachic, both official in the Pharmacopœia of India.

Order XXXIX. LABIATÆ.

Whole plant often covered with vesicular glands containing an odoriferous volatile oil. Stem herbaceous or subwoody, usually square. Leaves opposite or whorled, exstipulate. Flowers axillary, solitary or geminate, or in clustered axillary cymes termed verticillasters, scattered or crowded into spikes. Calyx persistent, of five connate sepals, sometimes irregular. Corolla monopetalous, hypogynous, irregular, more or less bilabiate. Stamens usually four, didynamous, sometimes two by abortion. Ovary borne on a thick disk, deeply four-lobed. Style simple, basilar. Stigma bifid. Fruit, of four achene-like lobes or nuts, surrounded by the persistent calyx.

Example for study—The White Dead Nettle,

OLEUM LAVANDULÆ (Oil of Lavender).—The oil distilled in Britain from the flowers of *Lavandula vera*.

Characters—Colourless or pale-yellow, with the odour of Lavender, and a hot bitter aromatic taste.

Preparations.

Linimentum Camphoræ compositum	...	60 minims in 1 pint.
Spiritus Lavandulæ...	...	1 volume in 50.
Tinctura Lavandulæ composita	...	45 minims in 1 pint.

OLEUM MENTHÆ VIRIDIS (Oil of Spearmint).—The oil distilled in Britain from fresh flowering Spearmint (*Mentha Viridis*).

Characters—Colourless or pale-yellow, with the odour and taste of Spearmint.

Preparation.

Aqua Menthæ Viridis...	...	1½ fl. drachms to 1 gallon.
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OLEUM MENTHÆ PIPERITÆ (Oil of Peppermint).—The oil distilled in Britain from fresh flowering Peppermint (*Mentha Piperita*).

LABIATÆ—SCROPHULARIACEÆ.

Characters—Colourless or pale-yellow, with the odour of Peppermint; taste warm, aromatic, succeeded by a sensation of cold in the mouth.

Preparations.

Aqua Menthæ Piperitæ...	...	1½ fl. drachms to 1 gallon.
Essentia Menthæ Piperitæ	...	1 volume in 5.
Pilula Rhei composita	...	1 minim in 1 drachm.
Spiritus Menthæ Piperitæ	...	1 volume in 50.

OLEUM ROSMARINI (Oil of Rosemary).—The oil distilled from the flowering tops of *Rosmarinus officinalis*. Continent of Europe. Cultivated also in England.

Characters—Colourless, with the odour of Rosemary, and a warm aromatic taste.

Preparations.

Linimentum Saponis	...	...	1 fl. drachm in 7 fl. ounces, nearly.
Spiritus Rosmarini	...	...	1 volume in 50.
Tinctura Lavandulæ composita	...	...	5 minims in 1 pint.

Other Plants of the order Labiatæ—The following are officinal in the United States Pharmacopœia :—*NEPETA CATARIA*, *Catnep*; *HEDEOMA PULEGIOIDES*, *American Pennyroyal*; *MARRUBIUM VULGARE*, *Horehound*; *MONARDA PUNCTATA*, *Horsemint*; *ORIGANUM VULGARE*, *Wild Marjoram*; *SALVIA OFFICINALIS*, *Common Sage*. Some of the above are familiar to the English Pharmacist, and the names of others indicate their properties. *MENTHA PULEGIUM*, *Pennyroyal*, affords the volatile oil known under that name.

Order XL. SCROPHULARIACEÆ.

Herbs or shrubby plants, with generally opposite exstipulate leaves. Flowers more or less irregular, inflorescence various. Calyx persistent, of four or five cohering sepals. Corolla hypogynous, monopetalous, sometimes spurred at the base. Æstivation imbricate. Stamens inserted on the corolla tube, two, or sometimes four, in the latter case didynamous, rarely five. Carpels two, cohering into a two-celled ovary. Style terminal, rarely bifid, stigma often bilobed. Fruit mostly a capsule. Placentas axile.

Examples for study—Foxglove, the common Blue Speedwell.

DIGITALIS FOLIA (Digitalis Leaf).—The dried leaf of *Digitalis purpurea*. Purple Foxglove. Collected from wild indigenous plants, when about two-thirds of the flowers are expanded.

SCROPHULARIACEÆ.—POLYGONACEÆ.

Characters—Ovate-lanceolate, shortly petiolate, rugose, downy, pale on the under surface, crenate.

Dose, in powder— $\frac{1}{2}$ to $1\frac{1}{2}$ grains.

Preparations.

Digitalinum.			
Infusum Digitalis	...	...	3 grains to 1 fluid ounce.
Tinctura Digitalis	...	...	54 $\frac{1}{2}$ grains to 1 fluid ounce.

Other plant of the order Scrophulariaceæ—LEPTANDRA VIRGINICA. The root is official in the United States Pharmacopœia, and is the source of *Leptandrin*, now introduced into England.

DIVISION III.

APETALOUS OR INCOMPLETE FLOWERED.

This division, also termed MONOCHLAMYDEOUS, includes plants with a single floral envelope (the calyx), or destitute of both calyx and corolla.

Order *XLI.* POLYGONACEÆ.

Herbs or rarely shrubs. Leaves alternate, simple, usually entire; petiole dilated at the base and amplexicaul, or inserted in an ochreate stipule. Flowers perfect or sometimes unisexual. Calyx free, more or less persistent and accrescent. Stamens perigynous, inserted on a disk lining the base of the perianth. Anthers dehiscing longitudinally. Styles two—four. Ovary superior, one-celled one-ovuled. Fruit usually a triangular nut, sometimes winged, toothed, or spiny.

Example for study—Common Dock.

RHEI RADIX (Rhubarb Root).—The dried root deprived of the bark, from one or more undetermined species of Rheum. From China, Chinese Tartary, and Thibet. Imported from Shanghai and Canton.

Characters—Trapezoidal roundish cylindrical or flattish pieces, frequently bored with one hole, yellow externally, internally marbled with fine waving greyish and reddish lines, finely gritty under the teeth; taste bitter, faintly astringent and aromatic; odour peculiar. Free from decay, not worm-eaten. Boracic acid does not turn the yellow exterior brown.

POLYGONACEÆ—PIPERACEÆ.

Dose—5 to 20 grains.

Preparations.

Extractum Rhei.				
Infusum Rhei	...	...	...	11 grains to 1 fluid ounce.
Pilula Rhei composita	...	...	...	1 part in 4, nearly.
Pulvis Rhei compositus	...	...	...	2 parts in 19.
Syrupus Rhei.				
Tinctura Rhei	...	...	...	44 grains to 1 fluid ounce.
Vinum Rhei	...	...	...	33 grains to 1 fluid ounce.

CHENOPODIUM ANTHELMENTICUM, *Wormseed*, in the natural order CHENOPODIACEÆ, officinal in the United States Pharmacopœia, is a largely-employed vermifuge.

Order XLII. PIPERACEÆ.

CUBEBA (Cubebæ).—The dried unripe fruit of *Cubeba officinalis*. Cultivated in Java.

Characters—The size of black pepper, globular, wrinkled, blackish, supported on a stalk of rather more than its own length; has a warm camphoraceous taste and characteristic odour.

Dose, in powder—30 to 120 grains.

Preparation.

Oleum Cubebæ.				
Tinctura Cubebæ...	...	...	...	2½ ounces to 1 pint.

PIPER NIGRUM (Black Pepper).—The dried unripe berries of *Piper nigrum*. Imported from the East Indies.

Characters—Small, roundish, wrinkled; tegument brownish-black, containing a greyish-yellow globular seed. Odour aromatic. Taste pungent, and bitterish.

Preparations.

Confectio Opii	...	...	...	...	1 part in 31.
Confectio Piperis	...	...	...	...	1 part in 10.
Pulvis Opii compositus	...	...	...	...	1 part in 7½.

MATICÆ FOLIA (Matico Leaves).—The dried leaves of *Artanthe elongata*. Imported from Peru.

Characters—From two to eight inches long, veined and tessellated on the upper surface, downy beneath, with an aromatic slightly astringent warm taste, and an agreeable aromatic odour.

Preparation.

Infusum Maticæ	1 ounce to 1 pint.
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Order XLIII. THYMELACEÆ.

MEZEREI CORTEX (Mezereon Bark).—The dried bark of *Daphne Mezereum*, *Mezereon*; or of *Daphne Laureola*, *Spurge Laurel*. Britain, the latter cultivated.

Characters—In strips or quilled pieces of various lengths, tough and pliable, olive-brown on the surface, white within, fibrous, odour faintly nauseous, taste hot and acrid.

Preparations.

Decoctum Sarsæ compositum ... 60 grains to 1 pint.
Extractum Mezerei Æthereum.

Order XLIV. LAURACEÆ.

CAMPHORA (Camphor).—A concrete volatile oil obtained from the wood of *Camphora Officinarum*. Imported in the crude state from China and Japan, and purified by sublimation in this country.

Characters and Test—White, translucent, tough, and crystalline; has a powerful penetrating odour, and a pungent taste followed by a sensation of cold; floats on water; volatilises slowly at ordinary temperatures; is slightly soluble in water, but readily soluble in rectified spirit and in ether. Sublimes entirely when heated.

Dose—1 to 10 grains.

Preparations containing Camphor.

Aqua Camphoræ.
Linimentum Aconiti ... 22 grains in 1 fluid ounce.
Linimentum Belladonnæ ... 22 grains in 1 fluid ounce.
Linimentum Camphoræ ... 1 in 5, nearly.
Linimentum Camphoræ compositum ... 54½ grains in 1 fluid ounce.
Linimentum Chloroformi.
Linimentum Hydrargyri.
Linimentum Iodi ... 11 grains in 1 fluid ounce.
Linimentum Opii.
Linimentum Saponis ... 22 grains in 1 fl. ounce.
Linimentum Sinapis compositum ... 24 grains in 1 fl. ounce.
Linimentum Terebinthinæ ... 1 part in 17½, nearly.
Linimentum Terebinthinæ aceticum.
Spiritus Camphoræ... 1 in 10.
Tinctura Camphoræ composita ... 1½ grains in 1 fl. ounce.
Unguentum Plumbi Subacetatis compositum.
Unguentum Hydrargyri compositum ... 1½ ounces in 13½ ounces.

CINNAMOMI CORTEX (Cinnamon Bark).—The inner bark of shoots from the truncated stocks of *Cin-*

LAURACEÆ.

namomum zeylanicum. Imported from Ceylon, and distinguished in commerce as Ceylon Cinnamon.

Characters—About one-fifth of a line thick, in closely-rolled quills, which are about four lines in diameter, containing several small quills within them, light yellowish-brown, with a fragrant odour and warm sweet aromatic taste: breaks with a splintery fracture.

Preparations.

Acidum Sulphuricum aromaticum ...	...	1 ounce to 1 pint.
Aqua Cinnamomi ...	...	20 ounces to 1 gallon.
Decoctum Hæmatoxyli ...	...	60 grains to 1 pint.
Infusum Catechu ...	...	60 grains to 1 pint.
Oleum Cinnamomi.		
Pulvis Catechu compositus ...	...	1 part in 10.
Pulvis Cinnamomi compositus ...	...	1 part in 3.
Pulvis Cretæ aromaticus ...	...	1 part in 11.
Pulvis Kino compositus ...	...	1 part in 5.
Tinctura Cardamomi composita ...	...	$\frac{1}{2}$ ounce to 1 pint.
Tinctura Catechu ...	...	1 ounce to 1 pint.
Tinctura Cinnamomi ...	...	$2\frac{1}{2}$ ounces to 1 pint.
Tinctura Lavandulæ composita ...	...	75 grains to 1 pint.
Vinum Opii ...	...	75 grains to 1 pint.

NECTANDRÆ CORTEX (Bebeeru Bark).—The bark of *Nectandra Rodiæi*, the Greenheart tree. Imported from British Guiana.

Characters—In large flat heavy pieces from one to two feet long, from two to six inches broad, and about a quarter of an inch thick. External colour greyish-brown, internal dark cinnamon-brown. Taste strongly and persistently bitter, with considerable astringency.

Preparation.

Beberæ Sulphas.

SASSAFRAS RADIX (Sassafras Root).—The dried root of *Sassafras officinale*. From North America.

Characters—In branched pieces, sometimes eight inches in diameter at the crown; bark externally greyish-brown, internally rusty-brown, of an agreeable odour, and a peculiar aromatic warm taste; wood light, porous, greyish-yellow, more feeble in odour and taste than the bark. Also in chips.

Preparation.

Decoctum Sarsæ compositum ... $\frac{1}{4}$ ounce to 1 pint.

The Medulla or pith of the Sassafras Root, is officinal in the United States Pharmacopœia.

Other Plants of the order Lauraceæ—The **LAURUS NOBILIS**, *Sweet Bay*, furnishes the bay berries, and the oil of bays of the shops. The tree is the classic Laurel.

Order XLV. MYRISTICACEÆ.

MYRISTICA (Nutmeg).—The kernel of the seed of *Myristica officinalis*. Cultivated extensively in the Banda Islands of the Malayan Archipelago.

Characters—Oval or nearly round, about an inch in length, marked externally with reticulated furrows, internally greyish-red with dark-brownish veins. It has a strong peculiar odour, and a bitter aromatic taste.

Preparations.

Oleum Myristicæ.			
Oleum Myristicæ expressum.			
Pulvis Catechu compositus	...	...	1 part in 10.
Pulvis Cretæ aromaticus...	...	...	1 part in 16, nearly.
Spiritus Armoracæ compositus...	...	...	$\frac{1}{2}$ ounce to 1 gallon.
Tinctura Lavandulæ composita...	...	...	75 grains to 1 pint.

Order XLVI. ULMACEÆ

ULMI CORTEX (Elm Bark).—The dried inner bark of *Ulmus campestris* Broad-leaved Elm. From trees indigenous to and cultivated in Britain.

Characters—A tough brownish-yellow bark, about half a line thick, without smell; taste mucilaginous, slightly bitter and astringent. Its decoction is turned green by perchloride of iron, and precipitates with a solution of gelatine.

Preparation.

Decoctum Ulmi 2½ ounces to 1 pint.

Other Plants of the order Ulmaceæ—*ULMAS FULVA*, the *Slippery Elm*, is official and much used in the United States. It is so rich in mucilage that poultices and a nutritious jelly are made of it.

Order XLVII. CANNABINACEÆ.

CANNABIS INDICA (Indian Hemp).—The dried flowering tops of the female plants of *Cannabis sativa*. For medicinal use that which is grown in India, and from which the resin has not been removed, is alone to be employed.

Characters—Tops consisting of one or more alternate branches, bearing the remains of the flowers and smaller leaves and a few ripe fruits,

CANNABINACEÆ—MORACEÆ—EUPHORBACEÆ.

pressed together in masses which are about two inches long, harsh, of a dusky-green colour and a characteristic odour.

Preparations.

Extractum Cannabis Indicæ.

Tinctura Cannabis Indicæ ... 22 grains of extract in 1 fl. oz., nearly.

LUPULUS (Hop).—The dried strobiles of the female plant of *Humulus Lupulus*. Cultivated in England.

Characters—Strobiles of a greenish-yellow colour, with minute yellow grains (*Lupuline*) adherent to the base of the scales. Odour aromatic, taste bitter.

Preparations.

Extractum Lupuli.

Infusum Lupuli $\frac{1}{2}$ ounce to 10 fl. ounces.

Tinctura Lupuli $2\frac{1}{2}$ ounces to 1 pint.

Order XLVIII. MORACEÆ.

FICUS (Fig).—The dried fruit of *Ficus Carica*. Imported from Smyrna.

Preparation.

Confectio Sennæ 12 parts to 75.

MORI SUCCUS (Mulberry Juice).—The juice of the ripe fruit of *Morus Nigra*, grown in Britain.

Characters—Of a dark violet colour, with a faint odour and an acidulous sweet taste.

Preparation.

Syrupus Mori.

Order XLIX. EUPHORBACEÆ.

Large trees, shrubs or herbs, usually with an acrid milky juice. Leaves mostly alternate, sometimes much reduced, usually two-stipulate, nearly always simple, very various in size and shape, consistence and clothing. Flowers unisexual, monœcious or diœcious, occasionally achlamydeous, and sometimes involucrate. Perianth when present inferior, lobed, with glandular, scaly, or petaloid appendages. Stamens one—many; filaments free, or united in one or more bundles. Ovary superior, of mostly three or sometimes more cells whorled around a central column. Style various, usually short, with as many branches as there are cells, or

again divided. Fruit usually a capsule, with three or more two-valved cocci, which separate (often elastically) from one another and from the axis. Seeds one or two in each cell.

Examples for study—The common Spurge, the Perennial Mercury.

OLEUM CROTONIS (Croton Oil).—The oil expressed from the seeds of *Croton Tiglium*, a native of India.

Characters of the Seeds—About the size of a grain of coffee, oval, or oval oblong, of a rounded or imperfectly quadrangular form, dark-brown or blackish, distinguished by their unpolished surface from Castor Oil seeds and by the absence of marbled brown spots and stripes.

Characters of the Oil—Slightly viscid ; colour brownish-yellow ; taste acrid, odour faintly nauseous.

Dose— $\frac{1}{2}$ to 1 minim.

Preparation.

Linimentum Crotonis 1 volume in 8.

CASCARILLÆ CORTEX (Cascarilla Bark).—The bark of *Croton Eluteria*. From the Bahama Islands.

Characters—In quills, two or three inches in length, and from two to five lines in diameter, dull brown, but more or less coated with white crustaceous lichens ; breaks with a short resinous fracture ; is warm and bitter to the taste ; and emits a fragrant odour when burned.

Preparations.

Infusum Cascarillæ 2 ounces to 1 pint.
Tinctura Cascarillæ 2½ ounces to 1 pint.

OLEUM RICINI (Castor Oil).—The oil expressed from the seeds of *Ricinus Communis*. Imported chiefly from Calcutta, and also from Italy.

Characters of the Seeds—Oval, somewhat compressed, varying in weight from four to eight grains, smooth and marked externally with grey, reddish-brown or blackish-brown spots and stripes.

Characters of the Oil—Viscid, colourless, or pale straw yellow, having a slightly nauseous odour and a somewhat acrid taste. Entirely soluble in one volume of alcohol and in two volumes of rectified spirit.

EUPHORBIACEÆ—ARISTOLOCHACEÆ—CUPULIFERÆ.

Dose—1 to 8 fluid drachms.

Preparations.

Collodium flexile...	...	...	...	1 fl. drachm to 6 fl. ounces.
Linimentum Sinapis compositum	...			5 fl. drachms to 5 fl. ounces.
Pilula Hydrargyri Subchloridi composita.				

KAMALA (*Kamala*).—A powder which consists of the minute glands that cover the capsules of *Rottlera tinctoria*. Imported from India.

Characters.—A fine granular mobile powder, of a brick-red colour; it is with difficulty mixed with water, but when boiled with alcohol the greater part is dissolved, forming a red solution. Ether dissolves most of it; the residue consisting principally of tufted hairs. It should be free from sand or earthy impurities.

Dose—30 grains to $\frac{1}{2}$ ounce.

Other Plants of the order Euphorbiaceæ.—*STILLINGIA SYLVATICA*, *Queen's Root*, is official in the United States Pharmacopœia, and is used in cutaneous affections. *EUPHORBIA RESINIFERA* yields the acrid resin used in veterinary practice. It is a native of Morocco. Many plants of this order are active poisons.

Order L. ARISTOLOCHACEÆ.

SERPENTARIÆ RADIX (*Serpentary Root*).—

The dried rhizome of *Aristolochia Serpentaria*. From the Southern parts of North America.

Characters.—A small roundish rhizome, with a tuft of numerous slender rootlets, about three inches long, yellowish, of an agreeable camphoraceous odour, and a warm bitter camphoraceous taste.

Preparations.

Infusum Serpentariæ	...	...	...	$\frac{1}{2}$ ounce to 1 pint.
Tinctura Cinchonæ composita	...			$\frac{1}{3}$ ounce to 1 pint.
Tinctura Serpentariæ	...			2 $\frac{1}{2}$ ounces to 1 pint.

Order LI. CUPULIFERÆ OR CORYLACEÆ.

QUERCUS CORTEX (*Oak Bark*).—The dried bark of the small branches and young stems of *Quercus pedunculata*. Collected in spring, from trees growing in Britain.

CUPULIFERÆ—ALTINGIACEÆ.

Characters—Covered with a greyish shining epidermis, cinnamon-coloured on the inner surface, fibrous, brittle, and strongly astringent.

Preparation.

Decoctum Quercus 1½ ounce to 1 pint.

GALLA (Galls).—Excrescences on *Quercus infectoria*, caused by the punctures and deposited ova of *Diplolepis Gallæ tinctoriæ*.

Characters—Hard heavy globular bodies, varying in size from half an inch to three-fourths of an inch in diameter, tuberculated on the surface, the tubercles and intervening spaces smooth; of a bluish-green colour on the surface, yellowish-white within, with a small central cavity; intensely astringent.

Preparations.

Acidum Gallicum.

Acidum Tannicum.

Tinctura Gallæ... 54½ grains to 1 fluid ounce.

Unguentum Gallæ 80 grains to 1 ounce.

Unguentum Gallæ cum Opio ... 80 grains to 1 oz., nearly.

Other Plants of the order Cupuliferæ or Corylaceæ—*QUERCUS ALBA*, the *White Oak*, is officinal in the United States Pharmacopœia; as also is *JUGLANS CINEREA*, the *Butternut* or *White Walnut*, natural order JUGLANDACEÆ, the bark of the root of which is a mild purgative. *SANTALUM ALBUM* belongs to the natural order SANTALACEÆ, and is a native of India; it supplies the fragrant Sandal Wood and the volatile oil, Ol. Santal. Flav., now frequently substituted for Copaiba.

Order LII. ALTINGIACEÆ.

STYRAX PRÆPARATUS (Prepared Storax).—

A balsam obtained from the bark of *Liquidambar orientale*. Purified by means of rectified spirit and straining.

Characters—A semitransparent brownish-yellow semi-fluid resin, of the consistence of thick honey, with a strong agreeable fragrance and aromatic bland taste. Heated in a test tube on the vapour bath, it becomes more liquid but gives off no moisture; boiled with solution of bichromate of potash and sulphuric acid it evolves the odour of hydride of benzoyl.

Preparation.

Tinctura Benzoini composita 33 grains to 1 fl. ounce.

CONIFERÆ.

SUB-CLASS II. GYMNOSPERMOUS.

Ovules produced superficially on a scale (bract or open ovary); fertilised by the direct application of the pollen to the apex of the nucleus, which the pollen tube penetrates. Flowers, except in one instance, unisexual.

Order LIII. CONIFERÆ.

Trees or shrubs, usually resinous. Buds naked or protected by scales. Leaves exstipulate, usually persistent, usually linear or acicular, frequently fascicled, parallel veined. Flowers in catkins, monœcious or diœcious, achlamydeous; male flowers deciduous. Female flowers in cones. Fruit dry or fleshy. Seeds naked, often winged. Cotyledons two or many.

Examples for study—The Scotch Fir; the Spruce Fir.

PIX BURGUNDICA (Burgundy Pitch).—A resinous exudation from the stem of the Spruce Fir *Abies excelsa*. Melted and strained; imported from Switzerland.

Characters—Hard and brittle, yet gradually taking the form of the vessel in which it is kept; opaque, varying in colour, but generally dull reddish-brown; of a peculiar somewhat empyreumatic perfumed odour, and aromatic taste, without bitterness; free from vesicles; gives off no water when heated.

Preparations.

Emplastrum Ferri	...	...	...	2 parts in 11.
Emplastrum Picis...	...	...	...	1 part in 2, nearly.

TEREBINTHINA CANADENSIS (Canada Balsam.)—The turpentine obtained by incision from the stem of *Abies balsamea*, Balm of Gilead Fir. From Canada.

Characters—A pale-yellow ductile oleo-resin, of the consistence of thin honey, with a peculiar agreeable odour, and a slightly bitter feebly acrid taste; by exposure drying very slowly into a transparent adhesive varnish; solidifying when mixed with a sixth of its weight of magnesia.

CONIFERÆ.

Dose—20 to 30 grains.

Preparations.

Charta Epispastica.
Collodium Flexile.

THUS AMERICANUM (Common Frankincense).—The concrete turpentine of *Pinus Tæda*, the Frankincense Pine, and *Pinus palustris*, the Swamp Pine. From the Southern States of North America.

Characters—A softish bright-yellow opaque solid, resinous but tough, having the odour of American turpentine.

Preparation.

Emplastrum Picis.

PIX LIQUIDA (Tar).—A bituminous liquid obtained from the wood of *Pinus Sylvestris* and other pines by destructive distillation.

Characters—Thick, viscid, brownish-black, of a well-known peculiar aromatic odour. Water agitated with it acquires a pale-brown colour, sharp empyreumatic taste, and acid reaction.

Preparation.

Unguentum Picis liquidæ.

OLEUM TEREBINTHINÆ (Oil of Turpentine).

—The oil distilled from the oleo-resin (turpentine) obtained from *Pinus palustris*, *Pinus Tæda*, and sometimes *Pinus Pinaster*.

Characters—Limpid, colourless, with a strong peculiar odour, and pungent and bitter taste.

Dose—10 minims to 4 fluid drachms.

Preparations.

Confectio Terebinthinæ	...	...	1 part in 4, nearly.
Enema Terebinthinæ	...	...	1 volume in 16.
Linimentum Terebinthinæ	...	...	16 parts in 19, nearly.
Linimentum Terebinthinæ aceticum	...	...	1 volume in 3.
Unguentum Terebinthinæ	...	...	1 part in 2, nearly.

CREASOTUM (Creasote).—A product of the distillation of Wood Tar.

Characters and Tests—A liquid, colourless or with a yellowish tinge and a strong empyreumatic odour. It is sparingly dissolved by water but freely by alcohol, ether, and glacial acetic acid. Specific gravit 1·071. It coagulates albumen. A slip of deal dipped into it, and afterwards into hydrochloric acid, acquires on exposure for a short time to the air a greenish-blue colour. Dropped on white filtering paper and exposed to a heat of 212°, it leaves no translucent stain. It turns the

CONIFERÆ.

plane of polarisation of a ray of polarised light to the right. It is not solidified by the cold produced by a mixture of hydrochloric acid and sulphate of soda.

Dose—1 to 3 drops.

Preparations.

Mistura Creasoti	...	...	...	1 minim in 1 fl. ounce.
Unguentum Creasoti	...	...	...	1 part in 9.
Vapor Creasoti.				

OLEUM JUNIPERI (Oil of Juniper).—The oil distilled in Britain from the unripe fruit of *Juniperus communis*.

Characters of the Fruit—The size of a large pea, of a blackish-purple colour, covered by a glaucous bloom; marked with a tri-radiate groove. Taste sweetish, terebinthinate; odour agreeable and balsamic.

Characters of the Oil—Colourless, or pale greenish-yellow, of a sweetish odour and warm aromatic taste.

Preparation.

Spiritus Juniperi 1 volume in 50.

SABINÆ CACUMINA (Savin Tops).—The fresh and dried tops of *Juniperus Sabina*. Collected in spring, from plants cultivated in Britain.

Characters—Twigs densely covered with minute imbricated appressed leaves in four rows; odour strong, peculiar, and unpleasant; taste acrid, bitter, resinous, and disagreeable.

Dose, in powder—4 to 10 grains.

Preparations.

Oleum Sabinæ, from fresh plant.				
Tinctura Sabinæ...	...	...	2½ ounces dried,	to 1 pint.
Unguentum Sabinæ	...	...	8 ounces fresh,	to 19 ounces.

RESINA (Resin).—The residue of the distillation of the turpentine from various species of *Pinus* and *Abies*.

Characters—Translucent, yellowish, brittle, pulverisable; fracture shining; odour and taste faintly terebinthinate. It is easily fusible, and burns with a dense yellow flame and much smoke.

Preparations.

Charta Epispastica.
 Emplastrum Calefaciens.
 Emplastrum Cantharidis.
 Emplastrum Hydrargyri.
 Emplastrum Picis.
 Emplastrum Resinæ.
 Emplastrum Saponis.
 Unguentum Resinæ.
 Unguentum Terebinthinæ.

CONIFERÆ—SMILACEÆ.

Other Plants of the order Coniferæ--*ABIES LARIX*, the *Larch*, a deciduous Spruce, freely planted in this country, yields the astringent bark *Cortex Laricis*, now much used in the form of tincture. *ABIES CANADENSIS*, the *Hemlock Spruce Fir*, is officinal in the United States Pharmacopœia. *JUNIPERUS OXYCEDRUS* yields, by destructive distillation, Juniper Tar or "Huile de Cade."

CLASS II. MONOCOTYLEDONS.

Stem without distinct layers of wood surrounding a column of pith, or a separate bark. Leaves with usually parallel venation. Floral whorls when present usually in threes or multiples of three. Embryo with one cotyledon. In germination adventitious roots usually at once proceed from the radicular end of the embryo. (Net veined leaves occur in a few orders.)

DIVISION I.

DICTYOGENS.

Leaves with a reticulated venation, articulated, deciduous. Wood of the rhizome arranged in a circular wedge-like manner.

Order LIV. SMILACEÆ.

SARSÆ RADIX (*Jamaica Sarsaparilla*).—The dried root of *Smilax officinalis*. Native of Central America ; imported from Jamaica.

Characters—Roots not thicker than a goose-quill, generally many feet in length, reddish-brown, covered with rootlets, and folded in bundles about eighteen inches long, scentless ; taste mucilaginous, feebly bitter, faintly acrid.

Preparations.

Decoctum Sarsæ	2½ ounces to 1 pint.
Decoctum Sarsæ compositum ...	2½ ounces to 1 pint.
Extractum Sarsæ liquidum ...	1 pound to 8 fl. ounces.

ZINGIBERACEÆ.

DIVISION II.

PETALOIDAL.

Leaves with a parallel venation, often permanent. Floral envelopes (perianth), verticillate, and usually coloured.

Order LV. ZINGIBERACEÆ.

CARDAMOMUM (Cardamoms).—The dried capsules of the Malabar Cardamom, *Elettaria Cardamomum*. Cultivated in Malabar. The seeds are best kept in their pericarps, from which they should be separated when required for use, the pericarpial coats being rejected.

Characters—Seeds obtusely angular, corrugated, reddish-brown, internally white, with a warm aromatic agreeable taste and odour, contained in ovate-oblong triangular pale-brown coriaceous ribbed pericarps.

Preparations.

Extractum Colocynthis compositum	...	1 part in 27, nearly.
Pulvis Cinnamomi compositus	...	1 part in 3.
Pulvis Cretæ Aromaticus	...	1 part in 44.
Tinctura Cardamomi composita	...	$\frac{1}{4}$ ounce to 1 pint.
Tinctura Gentianæ composita	...	$\frac{1}{4}$ ounce to 1 pint.
Tinctura Rhei	...	$\frac{1}{4}$ ounce to 1 pint.
Vinum Aloes	...	80 grains to 1 pint.

ZINGIBER (Ginger).—The scraped and dried rhizome of *Zingiber officinale*. From plants cultivated in the West Indies, India, and other countries.

Characters—Irregular lobed decorticated pieces, three or four inches long, subcompressed, yellowish-white but not chalky on the surface, with a short mealy fracture, hot taste, and agreeable aroma. Powder yellowish-white.

Preparations.

Confectio Opii	...	1 part in 12, nearly.
Confectio Scammonii	...	1 part in 6, nearly.
Infusum Sennæ	...	60 grains to 1 pint.
Pilula Scillæ composita	...	1 part in 6 $\frac{1}{4}$.
Pulvis Cinnamomi compositus	...	1 part in 3.
Pulvis Jalapæ compositus	...	1 part in 15.
Pulvis Opii compositus	...	1 part in 3.
Pulvis Rhei compositus	...	1 part in 9.
Pulvis Scammonii compositus	...	1 part in 8.
Syrupus Rhamni.		
Syrupus Zingiberis.		
Tinctura Zingiberis	...	2 $\frac{1}{2}$ ounces to 1 pint.
Tinctura Zingiberis fortior	...	10 ounces to 1 pint.
Vinum Aloes	...	40 grains to 1 pint.

CURCUMA LONGA (Turmeric).—The rootstock or tubers of *Curcuma Longa*. Occurs either in circular or oval pieces about two inches long and one broad, pointed at one end and marked with annular wrinkles, or somewhat contorted and tuberculated; yellowish externally; internally more or less orange-yellow; odour peculiar and aromatic; taste aromatic; when chewed renders the saliva yellow. Carminative; much used as a condiment. It is officinal only as a chemical test.

MARANTA ARUNDINACEA, of the allied order **ARUNDINACEÆ**, yields the well-known *Arrowroot*. *Canna Starch*, officinal in the United States Pharmacopœia, is prepared from the root of an undetermined species of **CANNA**.

Order LVI. ORCHIDACEÆ.

Perennial herbaceous terrestrial plants, or epiphytes or parasites. Rhizome creeping, or with fascicled fibrous roots, often accompanied with ovoid tubercles, sometimes stemless. Stem or scape usually simple. Leaves generally sheathing, the radical and lower cauline close together; often aphyllous or furnished with scales. Flowers solitary or numerous, hermaphrodite. Perianth superior, usually petaloid, irregular, formed of six leaflets in two whorls; the outer (*sepals*) 3, of which two are lateral and one inferior, usually becoming superior by the twisting of the pedicel or ovary. The inner (*petals*) 3, alternating with the sepals; the two lateral petals being similar, the third (*labellum*) originally superior, then becoming inferior, usually larger, and very various in shape and colouring. Stamens confluent with the style, forming a column (*gynandrous*). Pollen often collected into waxy masses (*pollinia*). Apex of the column a prominent beak (*rostellum*). Stigmatic surface viscid. Ovary inferior, of three connate carpels, one-celled, with parietal placentation. Seeds minute, numerous.

Examples for study—The common British Orchids.

The interest of this order in a Botanical point of view renders a description necessary in this place, but the economical and therapeutical aspects do not keep pace with the botanical, notwithstanding that it contains about 3,000 species.

ORCHIDACEÆ—IRIDACEÆ—LILIACEÆ.

VANILLA AROMATICA, *Vanilla*, is officinal in the Pharmacopœia of the United States; it is a native of tropical regions. SALEP is an amyaceous product of the tubercles of several indigenous and other species, but it is now little known.

Order LVII. IRIDACEÆ.

Perennial herbs, with a tuberous or bulbous rhizome. Scape central, simple or branched. Leaves usually all radical, equitant, ensiform or linear. Flowers regular or irregular. Perianth superior, petaloid, two-seriate. Stamens three, inserted on the outer segments of the perianth. Anthers extrorse, two-celled. Ovary inferior, three-celled. Stigmas three, very often dilated or petaloid. Fruit a capsule, three-lobed, three-celled. Dehiscence loculicidal.

Examples for study—The Spring Crocus; the Iris.

CROCUS (Saffron).—The dried stigma, and part of the style, of *Crocus sativus*. Imported from Spain, France, and Italy.

Characters—Thread-like styles, each terminated by three long orange-brown stigmas, broadest at the summit. Has a powerful aromatic odour. Rubbed on the wet finger it leaves an intense orange-yellow tint. When pressed between folds of white filtering paper, it leaves no oily stain.

Preparations.

Decoctum Aloes compositum ...	...	3 grains to 1 fluid ounce.
Pilula Aloes et Myrrhæ ...	...	1 part in 12.
Pulvis Cretæ aromaticus ...	...	1 part in 15, nearly.
Tinctura Cinchonæ composita ...	...	60 grains to 1 pint.
Tinctura Croci ...	...	1 ounce to 1 pint.
Tinctura Opii Ammoniata ...	...	180 grains to 1 pint.
Tinctura Rhei ...	...	$\frac{1}{4}$ ounce to 1 pint.

The Iris or Orris Root of the shops is the rhizome of *IRIS FLORENTINA*, and the preparation Iridin, used in the United States, is produced from that species and *L. Versicolor*.

In the order AMARYLLIDACEÆ is the *CRINUM ASIATICUM*, var. *TOXICARIUM*, officinal in the Indian Pharmacopœia; an emetic; in small doses diaphoretic.

Order LVIII. LILIACEÆ.

Herbaceous perennials, sometimes arborescent, with creeping rhizomes, bulbs, or tuberous or fibrous roots. Stem simple or branching. Leaves simple, sheathing, or sessile, generally linear. Perianth inferior, petaloid, of six divisions,

LILIACEÆ.

in two series. Stamens six, inserted on the receptacle or at the base of the perianth. Filaments distinct, anthers introrse. Ovary free, superior, three-celled. Style, simple. Stigmas three, more or less distinct. Fruit dry, a capsule, or very rarely a berry. Seeds numerous.

Examples for study—The White Lily ; the Tulip.

ALOE BARBADENSIS (Barbadoes Aloes).—The inspissated juice of the leaf of *Aloe vulgaris*. Imported from Barbadoes.

Characters—In yellowish-brown or dark-brown opaque masses ; breaks with a dull conchoidal fracture ; has a bitter nauseous taste, and a strong disagreeable odour ; dissolves almost entirely in proof spirit, and during solution exhibits under the microscope numerous crystals. Usually imported in gourds.

Dose—2 to 6 grains.

Preparations.

Enema Aloes	4 grains in 1 fl. ounce.
Extractum Aloes Barbadosis	8 parts from 10, nearly.
Pilula Aloes Barbadosis	1 part in 2, nearly.
Pilula Aloes et Ferri	1 part in $5\frac{1}{4}$.
Pilula Cambogiæ composita	1 part in 6, nearly.
Pilula Colocynthis composita	1 part in 3, nearly.
Pilula Colocynthis et Hyoscyami	1 part in $4\frac{1}{2}$, nearly.

ALOE SOCOTRINA (Socotrine Aloes).—The inspissated juice of the leaf of one or more undetermined species of *Aloe*. Produced chiefly in Socotra, and shipped to Europe by way of Bombay.

Characters—In reddish-brown masses, opaque, or translucent at the edges ; breaks with an irregular or smooth and resinous fracture ; has a bitter taste, and a strong but fragrant odour ; dissolves entirely in proof spirit, and during solution exhibits under the microscope numerous minute crystals.

Dose—2 to 6 grains.

Preparations.

Decoctum Aloes compositum (Extract) ...	4 grains in 1 fl. ounce.
Enema Aloes	4 grains in 1 fl. ounce.
Extractum Aloes Socotrinæ	1 part from 2, nearly.
Extractum Colocynthis compositum (Ex-tract)	} 1 part in $2\frac{1}{4}$, nearly.
Pilula Aloes et Assafoetida	
Pilula Aloes et Myrrhæ	1 part in 4.
Pilula Aloes Socotrinæ	1 part in 3.
Pilula Rhei composita	1 part in 2, nearly.
Tinctura Aloes	1 part in 6.
Tinctura Benzoini composita	11 grains to 1 fl. ounce.
Vinum Aloes	8 grains to 1 fl. ounce.
	$16\frac{1}{2}$ grains to 1 fl. ounce.

SCILLA (Squill).—The sliced and dried bulb of *Urginea Scilla*. From the Mediterranean coasts.

Characters—Bulb pear-shaped, weighing from half a pound to ten pounds; outer scales membranous, brownish-red or white; inner scales thick, whitish, fleshy, juicy; taste mucilaginous, intensely and disagreeably bitter, somewhat acrid. The dried slices are white or yellowish-white, slightly translucent, scentless, disagreeably bitter, brittle, and easily pulverisable if very dry, but if exposed, readily recovering moisture and flexibility.

Dose, in powder—1 to 3 grains.

Preparations.

Acetum Scillæ	...	...	...	2½ ounces to 1 pint, nearly.
Oxymel Scillæ.				
Pilula Ipecacuanhæ eum Scillæ	...			1 part in 7.
Pilulæ Scillæ composita	...	...		1¼ ounces to 6 ounces, nearly.
Syrupus Scillæ.				
Tinctura Scillæ	...	...	...	2½ ounces to 1 pint.

Other Plant of the order Liliaceæ—*ALLIUM URSINUM*, *Garlic*, still used in this country, is official in the United States Pharmacopœia.

Order LIX. MELANTHACEÆ.

Perennial herbs, with bulbous or tuberous roots, or more rarely with fascicled fibres. Stem or scape annual, mostly simple. Leaves all radical, or the cauline alternate. Flowers regular, usually hermaphrodite. Perianth inferior, petaloid, with six segments. Stamens six. Anthers ex-torse. Ovary superior, or rarely semi-inferior. Styles three. Ovary three-celled, and formed of three carpels. Fruit usually capsular. Seeds numerous.

Example for study—The Autumn Crocus or Colchicum.

SABADILLA (Cevadilla).—The dried fruit of *Asagrea officinalis*. Imported from Mexico.

Characters—Fruit about half an inch long, consisting of three light brown papyraceous follicles, each containing from one to three seeds, which are about a quarter of an inch long, blackish-brown, shining, slightly winged, possessing an intensely acrid bitter taste.

Preparation.

Veratria.

COLCHICI CORMUS (Colchicum Corm).—The fresh corm of *Colchicum autumnale*; collected about

MELANTHACEÆ.

the end of June; and the same stripped of its coats, sliced transversely, and dried at a temperature not exceeding 150°.

Characters—Fresh corm about the size of a chesnut, flattened where it has an undeveloped bud; furnished with an outer brown and an inner yellow coat; internally white, solid and fleshy; yielding when cut a milky acrid and bitter juice. Dried slices about a line thick, moderately indented on one, rarely on both sides, firm, flat, whitish, amylaceous.

Dose, in powder—2 to 8 grains.

Preparations.

Extractum Colchici.

Extractum Colchici aceticum.

Vinum Colchici 88 grains to 1 fluid ounce.

COLCHICI SEMINA (Colchicum Seeds).—The fully ripe seeds of *Colchicum autumnale*.

Characters—About the size of white mustard seed, very hard, and of a reddish-brown colour.

Preparation.

Tinctura Colchici seminum 54½ grains in 1 fl. ounce.

VERATRI VIRIDIS RADIX (Green Hellebore Root).—The dried rhizome of *Veratrum viride*. Collected in autumn in the United States and Canada.

Characters—It consists of a thick hard base, and numerous light-brown radicles attached to it. When dry it is inodorous. The taste is at first sweet, then bitter, followed by a persistent acrid burning sensation in the mouth.

Preparation.

Tinctura Veratri Viridis... .. 4 ounces to 1 pint.

Other Plants of the order Melanthaceæ—*VERATRUM ALBUM*, *White Hellebore*, used in this country occasionally externally as a constituent of ointments for cutaneous affections; is a powerful narcotico-acrid poison. It is official in the United States Pharmacopœia.

In the natural order *PALMACEÆ*, *SAGUS RUMPHII*, *Sago*, is official in the United States Pharmacopœia. *ARECA CATECHU* furnishes the *Areca* or *Betel Nuts*.

DIVISION III.

GLUMACEOUS.

Flowers in the axils of scales, arranged in spikelets, having no proper perianth.

Order LX. GRAMINACEÆ.

Annuals or perennials, usually herbaceous, tufted; with round, commonly hollow-jointed stems. Leaves alternate, springing from the nodes. Petiole dilated into a sheath split, with a ligule or membranous tongue at the base of the lamina. Inflorescence, spikelets on an axis, or paniculate spikelets, one or several flowered. The place of the perianth is supplied by two imbricated bracts or glumes. Stamens hypogynous, usually three, filaments capillary, anthers versatile. Ovary free, one-celled, one-ovuled. Styles two, or three, feathery or hairy. Fruit a caryopsis, dry, indehiscent. Albumen farinaceous. Embryo outside of the albumen.

Example for study—Wheat.

HORDEUM DECORTICATUM (Pearl Barley).

The husked seeds of *Hordeum distichon*. Cultivated in Britain.

Characters—White, rounded, retaining a trace of the longitudinal furrow.

Preparation.

Decoctum Hordei.

AMYLUM (Starch).—The Starch procured from the seeds of common wheat, *Triticum vulgare*.

Characters and Tests—In white columnar masses. When rubbed in a Wedgwood mortar with a little cold distilled water, it is neither acid nor alkaline to test-paper, and the filtered liquid does not become blue on the addition of solution of iodine. Mixed with boiling water and cooled, it gives a deep blue colour with iodine.

Preparations.

Glycerinum Amyli ...	...	...	1 part in 11, by weight.
Mucilago Amyli ...	...	...	12 grains to 1 fluid ounce.
Pulvis Tragacanthæ compositus ...	...	...	1 part in 6.

SECALE CEREALE (Rye).—Cultivated in many parts of Europe. The officinal part is the compact mycelium or spawn of *Claviceps purpurea*, produced within the paleæ. (See Fungi.)**SACCHARUM PURIFICATUM** (Refined Sugar).

— $C_{24}H_{22}O_{22}$ or $C_{12}H_{22}O_{11}$. Pure cane sugar prepared

GRAMINACEÆ.

from the juice of the stem of *Saccharum officinarum*. From plants cultivated in the West Indies and other tropical countries.

Characters—Compact crystallised conical leaves, and known in commerce as lump sugar.

Other Plants of the order Graminacæ—ORYZA SATIVA, *Common Rice*, is officinal in the Indian Pharmacopœia ; it supplies a poultice and a demulcent decoction. ANDROPOGON CITRATUM, *Lemon Grass*, affording Oil of Lemon Grass or *Verbena* ; and ANDROPOGON NARDUS, *Citronelle*, are also officinal. ANDROPOGON PACHNODES affords a volatile oil somewhat resembling the two preceding ; it is used as an external application in rheumatic affections.

FILICES.

SUB-KINGDOM II.

CRYPTOGAMOUS, ACOTYLEDONOUS, OR FLOWERLESS PLANTS.
—Plants destitute of stamens and ovaries. Propagation by means of homogeneous spores, consisting of a single cell. They have no true flowers.

CLASS III. ACROGENS.

Axis of growth distinct, growing from the apex, with usually no provision for subsequent increase in diameter, and with frequently distinct foliage, the venation of which is forked. Reproduction by the action of antherozoids on archegonia. Germination indefinite. The leaves possess stomata.

Order LXI. FILICES.

FILIX MAS (Male Fern).—The dried rhizome with the bases of the footstalks and portions of the root fibres of *Aspidium Filix Mas*. Collected in summer.

Characters—Tufted, scaly, greenish-brown; powder greenish-yellow, with a disagreeable odour, and a nauseous, bitter, somewhat astringent taste.

Preparation.

Extractum Filicis liquidum.

Other Plants of the order Filices—*ADIANTUM CAPILLUS VENERIS* gives its name to the *Syrup of Maidenhair*. The rhizomes of *PTERIS AQUILINA* are reputed to possess anthelmintic properties.

In the natural order LYCOPODIACEÆ is *LYCOPodium CLAVATUM*, the spores of which are known as *Lycopodium*, and used for covering pills, and also, from their inflammable nature, for fireworks. The plant is officinal in the United States Pharmacopœia.

CLASS IV. THALLOGENS.

Axis of growth indeterminate, growth taking place chiefly peripherically and horizontally. Plants wholly composed of cellular tissue. Reproductive organs various. No distinction of stems and leaves, stomata absent.

Order LXII. LICHENES.

CETRARIA (Iceland Moss).—The entire lichen, *Cetraria islandica*. Native of the North of Europe.

Characters—Foliaceous, lobed, crisp, cartilaginous, brownish-white, paler beneath; taste bitter, and mucilaginous. A strong decoction gelatinises on cooling.

Preparation.

Decoctum Cetrariæ... 1 ounce to 1 pint.

LACMUS (Litmus).—Litmus is the product of *Roccella Tinctoria*, Dyer's Orchella Weed. It is a blue pigment prepared from an infusion of the entire Lichen by the action of soda or potash. It is officinal solely as a chemical test.

Characters—Small blue lumps, readily reduced to powder.

Order LXIII. FUNGI.

ERGOTA (Ergot).—The sclerotium (compact mycelium or spawn) of *Claviceps purpurea*, produced within the paleæ of the common rye, *Secale cereale*.

Characters—Subtriangular, curved, with a longitudinal furrow on the concave side, obtuse at the ends; from one-third of an inch to an inch and a half in length; of a violet-brown colour on the surface, pinkish within, solid, frangible, fracture short, odour faintly marked, but strong if the powder be triturated with solution of potash.

Dose—20 to 30 grains.

Preparations.

Extractum Ergotæ liquidum	...	...	1 ounce to 1 fluid ounce.
Infusum Ergotæ...	...	...	11 grains to 1 fluid ounce.
Tincturæ Ergotæ	...	...	109 grains to 1 fluid ounce.

FUNGI.

CEREVISIÆ FERMENTUM (Beer Yeast).—

The ferment obtained in brewing beer.

Characters.—Viscid, semifluid, frothy, exhibiting under the microscope numerous round or oval confervoid cells. The yeast of beer (*Torula Cerevisiæ*) is a production the nature of which is still far from being determined. It is certain that it is the cause and effect of fermentation, and that the globules composing it are jointed end to end, and are mostly free or separate, and that their multiplication is due to cell division. Mr Berkeley thinks that it is a modification of *Penicillium Glaucum* (*Mould*), since this fungus is found to spring from these globules when exposed to the air. "The yeast plant, which, by its vegetation at a high temperature, is generally supposed to cause fermentation in beer, bread, &c., would seem likewise to be a mycelial state composed of conidial cells of a species of *Penicillium*" (Bentley). The subject still requires research.

In the natural order ALGÆ is *CHONDRUS CRISPUS*, the *Irish Carragheen Moss*, and also *GRACILIUM LICHENOIDES*, *Ceylon Moss*, both yielding a vegetable jelly. The latter is officinal in the Pharmacopœia of India. These plants are both marine algæ, and besides them other species yield a nutritious jelly used on the shores where they are found. From the ashes of *Wrack* iodine and soda are obtained.

PART II.

MATERIA MEDICA OF THE ANIMAL
KINGDOM.

CLASS—ANNELIDA.

HIRUDO (the Leech).—1, *Sanguisuga medicinalis*, the Speckled Leech; and, 2, *Sanguisuga officinalis*, the Green Leech. Collected chiefly in France, Spain, Italy, and Hungary.

Characters—Body elongated, two or three inches long, tapering to each end, plano convex, wrinkled transversely; back olive green, with six rusty-red longitudinal stripes. 1, belly greenish-yellow spotted with black; 2, belly olive-green not spotted.

CLASS—INSECTA.

Order—COLEOPTERA.

CANTHARIS (Cantharides).—*Cantharis vesicatoria*. The Beetle, dried; collected chiefly in Hungary.

Characters and Tests—From eight to ten lines long, furnished with two wing-covers of a shining metallic-green colour, under which are two

INSECTA.

membranous transparent wings; odour strong and disagreeable; powder greyish-brown, containing shining-green particles. Free from mites.

Preparations.

Acetum Cantharidis	...	...	2 ounces to 1 pint.
Charta Epispastica.			
Emplastrum Calefaciens	...	...	1 part in 24, nearly.
Emplastrum Cantharidis	...	...	1 part in 3.
Liquor Epispasticus	...	...	1 ounce to 2½ fl. ounces.
Tinctura Cantharidis	...	...	5½ grains to 1 fluid ounce.
Unguentum Cantharidis	...	...	1 part to 7, nearly.

In the Pharmacopœia of India the MYLABRIS CICHORII, *Telini Fly*, is also official, and answers equally well as a vesicant. In this insect the wing cases are of an obscure yellow with three large transverse dark bands.

Order—HEMIPTERA.

COCBUS (Cochineal).—The dried female insect, *Coccus Cacti*. Reared in Mexico and Teneriffe.

Characters—Ovate, plano-convex, about two lines long, wrinkled, black or greyish-white; yields, when crushed, a puce-coloured powder. The greyish-white insect quickly becomes black when warmed before the fire.

Preparations.

Tinctura Cardamomi composita	...	...	60 grains to 1 pint.
Tinctura Cinchonæ composita	...	...	30 grains to 1 pint.
Tinctura Cocci	...	...	2½ ounces to 1 pint.

Order—HYMENOPTERA.

MEL (Honey).—A saccharine secretion deposited in the honeycomb, by *Apis mellifica*, the hive bee.

Characters and Test—When recently separated from the honeycomb, it is a viscid translucent liquid, of a brownish-yellow colour, which gradually becomes partially crystalline and opaque. It has a peculiar heavy odour, and a very sweet taste. Boiled with water for five minutes and allowed to cool it does not become blue with the solution of iodine.

Preparation.

Mel depuratum.

CERA FLAVA (Yellow Wax).—The prepared honeycomb of the Hive Bee, *Apis mellifica*.

Characters—Firm, breaking with a granular fracture, yellowish, having an agreeable honey-like odour. Not unctuous to the touch; does not

INSECTA—PISCES.

melt under 140° ; yields nothing to cold rectified spirit, but is entirely soluble in oil of turpentine. Boiling water in which it has been agitated, when cooled, is not rendered blue by iodine.

Preparations.

Emplastrum Calefaciens.
Emplastrum Cantharidis.
Emplastrum Cerati Saponis.
Emplastrum Galbani.
Emplastrum Picis.
Unguentum Cantharidis.
Unguentum Hydrargyri compositum.
Unguentum Hydrargyri oxidi rubri.
Unguentum Picis liquidæ.
Unguentum Resinæ.
Unguentum Sabinæ.
Unguentum Terebinthinæ.

CERA ALBA (White Wax).—Yellow wax bleached by exposure to moisture, air, and light.

Characters—Hard, nearly white, translucent. Not unctuous to the touch; does not melt under 150° .

Preparations.

Charta Epispastica.
Suppositoria Acidi Tannici.
Suppositoria Hydrargyri.
Suppositoria Morphinæ.
Suppositoria Plumbi composita.
Unguentum Cetacei.
Unguentum Plumbi Subacetatis compositum.
Unguentum Simplex.

CLASS—PISCES.

ICHTHYOCOLLA (Isinglass).—Obtained from *Acipenser Huso*, and other species of the Sturgeon. Natives of the Caspian and Black Seas. The swimming bladder or sound, prepared and cut into fine shreds is known as Isinglass.

Characters—It is light, coriaceous, of a whitish colour, semi-transparent, tasteless, inodorous, insoluble in cold water, readily soluble in boiling water, and forms a transparent jelly in cooling. Fifteen grains of isinglass are sufficient to impart a firm consistence to one ounce of water.

OLEUM MORRHUÆ (Cod-Liver Oil).—The oil extracted from the fresh liver of the cod, *Gadus*

PISCES—AVES—MAMMALIA.

Morrhua, by the application of a heat not exceeding 180°.

Characters and Test—Pale-yellow, with a slight fishy odour, and bland fishy taste. A drop of sulphuric acid added to a few drops of the oil on a porcelain slab develops a violet colour which soon passes to a yellowish or brownish-red.

Dose—1 to 8 fluid drachms.

The Oil of *SQUALUS CARCHARIAS*, the *White Shark*, is officinal in the Pharmacopœia of India, as a substitute for Cod Liver Oil, that fish being abundant in the Indian Seas; but it has a much more strongly marked and disagreeable taste.

CLASS—AVES.

ALBUMEN OVI (Egg Albumen).—The liquid white of the egg of *Gallus Banckiva*, *var. domesticus*, the domestic cock and hen; and

OVI VITELLUS (Yolk of Egg).—The yolk of the egg of the same birds. The first of these is used in solution as a chemical test, the second is contained in the following

Preparation.

Mistura Spiritus Vini Gallici.

CLASS—MAMMALIA.

Order—CETACEA.

CETACEUM (Spermaceti).—Nearly pure cetine, obtained, mixed with oil, from the head of the Sperm Whale, *Physeter macrocephalus*, inhabiting the Pacific and Indian Oceans. It is separated from the oil by filtration and pressure, and afterwards purified.

Characters and Tests—Crystalline, pearly-white, glistening, translucent, with little taste or odour, reducible to powder by the addition of a little rectified spirit. Scarcely unctuous to the touch; does not melt under 100°.

Preparations.

Charta Epispastica.
Unguentum Cetacei.

Order—RUMINANTIA.

MOSCHUS (Musk).—The inspissated and dried secretion from the preputial follicles of *Moschus moschiferus*; native of the mountainous regions of Central Asia. Imported from China and India.

Characters—In irregular reddish-black rather unctuous grains; having a strong peculiar very diffusible odour, and a bitter aromatic taste; contained in a round or slightly oval membranous sac, about two inches in diameter, covered on the outer side with stiff greyish hairs arranged in a concentric manner around its central orifice.

Dose—5 to 10 grains.

SEVUM PRÆPARATUM (Prepared Suet).—The internal fat of the abdomen of the sheep, *Ovis Aries*, purified by melting and straining.

Characters—White, smooth, almost scentless; fusible at 103°.

Preparations.

Emplastrum Cantharidis.

Unguentum Hydrargyri.

SACCHARUM LACTIS (Sugar of Milk).— $C_{24}H_{24}O_{24}$, or $C_{12}H_{24}O_{12}$. A crystallised sugar, obtained from the whey of milk by evaporation.

Characters—Usually in cylindrical masses, two inches in diameter, with a cord or stick in the axis, or in fragments of cakes; greyish-white, crystalline on the surface and in its texture, translucent, hard, scentless, faintly sweet, gritty when chewed.

FEL BOVINUM PURIFICATUM (Purified Ox Bile.)—The purified gall of the Ox, *Bos Taurus*.

Characters and Tests—A yellowish-green substance, having a taste partly sweet, and partly bitter, soluble in water and in spirit. A solution of one or two grains of it, in about a fluid drachm of water, when treated, first with a drop of freshly-made syrup consisting of one part of sugar and four of water, and then with sulphuric acid cautiously added until the precipitate at first formed is redissolved, gradually acquires a cherry-red colour, which changes in succession to carmine, purple, and violet. Its watery solution gives no precipitate on the addition of rectified spirit.

MAMMALIA.

Order—PACHYDERMATA.

ADEPS PRÆPARATUS (Prepared Lard).—The purified fat of the hog, *Sus scrofa*.

Characters and Tests—A soft white fatty substance, melting at about 100°. Has no rancid odour; dissolves entirely in ether. Distilled water in which it has been boiled, when cooled and filtered, gives no precipitate with nitrate of silver, and is not rendered blue by the addition of solution of iodine.

Preparations.

Adeps Benzoatus.
Emp. Cantharidis.
Unguentum Aconitiæ.
Unguentum Atropiæ.
Unguentum Belladonnæ.
Unguentum Hydrargyri.
Unguentum Hydrargyri Nitratis.
Unguentum Hydrargyri Subchloridi.
Unguentum Iodi.
Unguentum Potassæ Sulphuratæ.
Unguentum Potassii Iodidi.
Unguentum Sabinæ.
Unguentum Simplex.
Unguentum Sulphuris Iodidi.
Unguentum Terebinthinæ.
Unguentum Veratriæ.

Order—RODENTIA.

CASTOREUM (Castor).---The dried preputial follicles and their secretion, obtained from the Beaver, *Castor Fiber*, and separated from the somewhat shorter and smaller oilsacs which are frequently attached to them. From the Hudson's Bay Territory.

Characters—Follicles in pairs, about three inches long, fig-shaped, firm, and heavy, brown or greyish-black; containing a dry resinous reddish-brown or brown highly odorous secretion, in great part soluble in rectified spirit, and in ether.

Dose—5 to 10 grains.

Preparation.

Tinctura Castorei 22 grains to 1 fl. ounce.

ADDITIONS TO THE PHARMACOPŒIA, 1874.

VEGETABLE KINGDOM.

Order X. AURANTIACEÆ.

AURANTII FRUCTUS (Bitter Orange).—The ripe fruit of *Citrus Bigaradia*. Imported from the South of Europe.

Preparation

Tinctura Aurantii Recentis.

Order XXX A.* SAPOTACEÆ.

GUTTA PERCHA (Gutta Percha).—The concrete juice of *Isonandra Gutta*. A native of Bornéo, Sumatra, and other Eastern Islands.

Characters and Tests—In tough flexible pieces, of a light brown or chocolate colour. Soluble or nearly soluble in chloroform, yielding a more or less turbid solution.

Preparation.

Liquor Gutta Percha.

Order LIII. CONIFERÆ.

LARICIS CORTEX (Larch Bark).—The bark, deprived of its outer layer, of *Larix Europæa*, *D. C.*, *Abies Larix Rich.*, the common Larch. Grown in Britain.

Preparation.

Tinctura Laricis 2½ ounces to 1 pint.

* The position of this Order is between 30 and 31.

Order LIX. A. PALMACEÆ.*

ARECA (*Areca Nut*).—The seed of *Areca Catechu*, the Betel Nut Tree. Imported from the East Indies.

Characters—The nuts are about the size of a large nutmeg, but less wrinkled and more globular, having a flattened base and somewhat conical apex. The interior is hard, white, finely marbled with dark brown.

Dose, in powder— $\frac{1}{2}$ to $\frac{3}{4}$ ounce.

ANIMAL KINGDOM.

MAMMALIA.

PEPSIN (*Pepsin*).—A preparation of the mucous lining of a fresh and healthy stomach of the pig, sheep, or calf.

Characters and Tests—A light yellowish-brown powder having a faint, but not disagreeable odour, and a slightly saline taste, without any indication of putrescence. Very little soluble in water or spirit. Two grains of it with an ounce of distilled water to which five minims of hydrochloric acid have been added form a mixture in which 100 grains of hard boiled white of egg in thin shavings will dissolve on their being digested together for about four hours at a temperature of 98°.

Dose—2 to 5 grains.

NOTE ON PAREIRA BRAVA.

Mr Hanbury, having pointed out in the "Pharmaceutical Journal" the claims of *Chondodendron tomentosum* to be the drug on which the reputation of Pareira Root was founded, a specimen has been added to the collection in addition to those of "the ordinary worthless" kind, and the true *Cissampelos Pareira*. His description is as follows:—"A tortuous branching root wrinkled longitudinally and having transverse fissures, contractions, and ridges. In transverse section it does not display zones of the same regular and beautiful definition as the ordinary Pareira Brava. In the root of *Chondodendron* there is a large well-marked central column composed of wedges diverging from a common axis, round which are arranged a few concentric rings intersected by wedge-shaped rays which are often irregular, scattered, and indistinct. The axis is not often eccentric."

* The position of this Order is between 59 and 60.

INDEX.

Names not in the British Pharmacopœia are printed in Italics.

	PAGE		PAGE
Abies	52, 55	Aurantium	10, 73
<i>Abrus</i>	19	<i>Azadarichta</i>	13
Acacia	19	Balsamodendron	14
Aconitum	2, 3	Balsam Peruv.	16
Adeps	72	———— Tolu	16
<i>Adiantum</i>	64	Beberu	46
Ægle	9	Belæ fruct.	9
Albumen	70	Belladonna	38
<i>Allium</i>	60	Benzoinum	33
Aloe	59	<i>Berberis</i>	4
<i>Alstonia</i>	34	<i>Boswellia</i>	14
<i>Althea</i>	8	Brayera	21
Ammoniacum	26	<i>Bryonia</i>	22
Amygdalus	20	Buchu	19
Amylum	62	<i>Butea</i>	11
Anacyclus	32	<i>Cæsalpinia</i>	19
<i>Anamirta</i>	4	Cajuput	23
<i>Andrographis</i>	40	<i>Calatropis</i>	36
<i>Andropogon</i>	63	Calumba	4
<i>Anemone</i>	3	Cambogia	8
Anethum	24	Camphora	45
Anisum	25	Canella	11
Anthemis	31	Cannabis	47
Apis	68	<i>Canna</i>	57
<i>Arachis</i>	19	Cantharis	67
Arctostaphylos	33	Capsicum	37
Areca	61, 76	Cardamomum	56
Aristolochia	50	Carum	25, 27
Armoracia	7	Caryophyllus	23
Arnica	31	Cascarilla	49
Artanthe	44	Cassia	72
Artemisia	32, 33	Castor	17, 18
Asagræa	60	Catechu	19, 30, 61
Aspidium	64	Cephaëlis	28
Assafœtida	27	Cera	68, 69
Astragalus	15		
Atropa	38		

INDEX.

	PAGE		PAGE
Cetraria	65	Elemi	14
Cetaceum	70	Elettaria	56
<i>Chelidonium</i>	6	Ergota... ..	65
<i>Chenopodium</i>	44	<i>Erigeron</i>	33
<i>Chimaphilla</i>	33	<i>Erythræa</i>	35
Chirata	35	<i>Eucalyptus</i>	24
<i>Chondrus</i>	66	Eugenia	23
Cinchona	28, 29, 30	<i>Eupatorium</i>	33
Cinnamomum	45	Euphorbia	50
Cissampelos	4	Exogonium	37
Citrullus	22		
Citrus	11, 73	Fel	71
Claviceps	65	Fermentum	66
<i>Cocculus</i>	4	Ferula	27
Coccus	68	Ficus	47
Cochlearia	7	Filix Mas	64
<i>Coffea</i>	30	Fœniculum	24
Colchicum	60, 61	Fraxinus	41
Colocynth	22		
Conium	26	Gadus	69
Convolvulus	36	Galbanum	27
Copaiba	18	Galipea	11
<i>Coptis</i>	3	Galla	51
Coriandrum	25	Garcinia	8, 9
<i>Cornus</i>	24	<i>Gelsemium</i>	34
Creosotum	53	Gentiana	35
Crocus	58	<i>Geranium</i>	13
<i>Crinum</i>	58	Glycyrrhiza	15
Croton	49	<i>Gonolobus</i>	36
Cubeba	44	Gossypium	8
<i>Cucurbita</i>	22	<i>Gracilium</i>	66
Curcuma	57	Guaiacum	12
Cusparia	11	<i>Gualtheria</i>	33
Cusso	21	Gutta Percha	73
		<i>Gynocardia</i>	7
Daphne	45		
Datura	39	Hæmatoxylon	19
<i>Delphinium</i>	3	Hedeoma	42
Digitalis	42	<i>Helleborus</i>	3
<i>Diospyros</i>	53	Hemidesmus	35
<i>Dipterocarpus</i>	9	<i>Hibiscus</i>	8
Dorema	26	Hirudo	67
<i>Drimys</i>	3	Hordeum	62
Dulcamara	37	Humulus	48
		<i>Hydrastis</i>	3
Ecbalium	22	<i>Hydrocotyle</i>	27

INDEX.

	PAGE		PAGE
Hyoscyamus	39	Myristica	47
Ichthyocolla	69	Myroxylon	16
Illicium	3	Myrrha	14
Indigo	16	Narthex	27
Ipecacuanha	28	Nectandra	46
<i>Iris</i>	58	<i>Nepeta</i>	42
Isonandra	33, 73	Nicotiana	39
Jalapa	37	Nux Vomica	34
Jateorrhiza	4	Olea	40
<i>Juglans</i>	51	Oleum Terebinth. ...	53
Juniperus	54, 55	Oleum Morrhuæ ...	69
Kamala	50	<i>Olibanum</i>	14
Kino	17	Ophelia	35
Krameria	9	Opium	5
Kousso	21	<i>Origanum</i>	42
Lacmus	65	<i>Oryza</i>	63
Lactuca	32	Ovum	70
Larix	73	Papaver	5, 6
Laurocerasus	21	Pareira	4, 74
Laurus	46	<i>Paullinia</i>	13
Lavandula	41	<i>Pharbitis</i>	37
<i>Leptandra</i>	43	Pepsin	74
Limonum	10	Picræna	12
Linum	13	Pimenta	23
Liquidambar	51	Pimpinella	25
Lobelia	33	Pinus	53
<i>Lycopodium</i>	64	<i>Piper</i>	44
Manna	40	Pistacia	13
<i>Maranta</i>	57	Pix Burgund.	52
<i>Marrubium</i>	42	Pix Liquida	53
Mastiche	13	<i>Plantago</i>	40
Matico	44	Podophyllum	3
Mel	68	Polygala	9
Melaleuca	23	Prunus	20, 22
Mentha	41, 42	<i>Pteris</i>	64
Menyanthes	33	Pterocarpus	17
<i>Monarda</i>	42	Punica	23
<i>Morus</i>	47	Pyrethrum	32
Moschus	71	Quassia	12
<i>Mucuna</i>	19	Quercus	50, 51
<i>Mylabris</i>	68	Resina	54
<i>Myrcia</i>	24	Rhamnus	13.

INDEX.

	PAGE		PAGE
Rheum	43	<i>Spigelia</i>	34
Ricinus	49	<i>Squalus</i>	70
Roccella	65	<i>Statice</i>	40
Rosa	21	<i>Stillingia</i>	50
Rosmarinus	42	Stramonium	39
Rottlera	50	Strychnos	34
<i>Rubus</i>	22	Styrax	51, 33
Ruta	12	Sumbul	25
Sabadilla	60	Tabacum	18
Sabina	45	Tamarindus	39
Saccharum	62, 70	Taraxacum	32
Saffron	58	Terebinthina	52
<i>Sagus</i>	61	Theobroma... ..	8
<i>Salep</i>	58	Thus	53
<i>Salvia</i>	42	<i>Tinospora</i>	4
Sambucus	28	<i>Toddalia</i>	10
<i>Sanguinaria</i>	6	Torula	66
<i>Santalum</i>	51	Tragacantha	15
Santonica	32	Triticum	62
Sarothamnus	17	<i>Tylophora</i>	36
Sarsa	55	Ulmus	47
Sassafras	46	Uncaria	30
Scammonium	36	Urginea	60
Scilla	60	Uvæ	10
Secale	62	Uva Ursi	33
Senega	9	Valeriana	30
Senna	17, 18	<i>Vanilla</i>	58
Serpentaria	50	Veratrum	61
Sevum	71	Vitis	10
Sinapis	7	Zingiber	56
Smilax	55		
Solanum	37		
<i>Soymida</i>	13		

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